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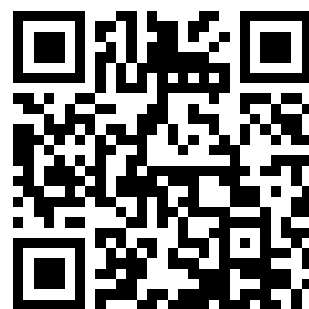
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THE ARCHITECT

AND CONTRACT REPORTER.

A JOURNAL OF ART, CIVIL ENGINEERING & BUILDING.

VOL. LXXXVIII.—No. 2272.

FRIDAY, JULY 5, 1912.

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VOL. LXXXVIII.

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THE
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A WEEKLY

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à la symétrie—BLONDEL.

VOL. LXXXVIII.

JULY TO DECEMBER 1912.

LONDON:

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THE ARCHITECT AND CONTRACT REPORTER. A JOURNAL OF ART, CIVIL ENGINEERING & BUILDING.

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FORTHCOMING EVENTS.

<i>Friday, July 5.</i>
Royal Sanitary Institute : Provincial Sessional Meeting at Torquay (two days).
<i>Saturday, July 6.</i>
Liverpool Architectural Association : Supper at the University Club to the Architectural Associations of London and Dublin, at 8 P.M.
Northern Architectural Association : Students' Sketching Club.
<i>Tuesday, July 9.</i>
Manchester Society of Architects : Visit to Pilkington's Tile Works, Clifton Junction, train Victoria Station at 5.45.
<i>Wednesday, July 10.</i>
Wiltshire Archaeological and Natural History Society : Annual Meeting at Devizes (three days).
<i>Thursday, July 11.</i>
Institution of Municipal and County Engineers : Dinner at the Hotel Metropole.
<i>Friday, July 12.</i>
Institute of Sanitary Engineers : Visit to Birmingham (three days).

FAIR WAGES.

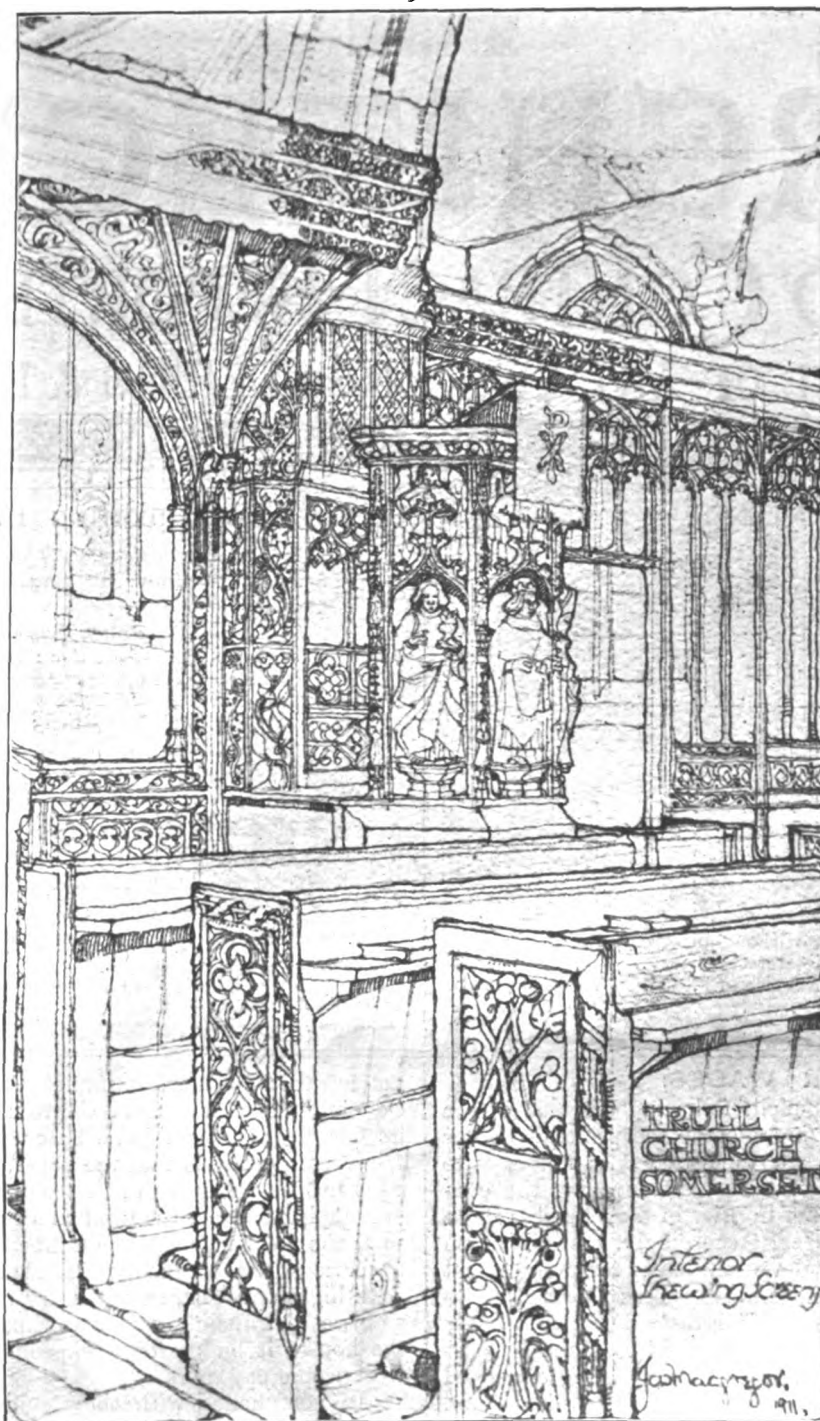
THE London County Council, following the lead of the House of Commons, having adopted the principle of fair wages in making contracts, finds that it is not easy to prevent unscrupulous employers from evading the conditions and so undercutting in price of their tenders those firms who do pay fair wages. Accordingly, the Council on February 22, 1910, passed a resolution as follows : " That it be referred to the General Purposes Committee to report whether all persons or firms submitting tenders to the Council should not be required to make a ' fair-house ' declaration as to the workpeople being employed at trade union rates of wages for such working hours and under such conditions of employment as are in conformity with the recognised customs of the various trades, together with a penalty clause in the event of the non-compliance with the terms of the declaration."

We are not immediately concerned to discuss the wisdom of the fair wages policy nor the statesmanship of adopting trade union rates as fair wages, but it is obvious from the elaborate precautions that the London County Council seem to think necessary to enforce that policy that they, as the representatives of the ratepayers of London, are prepared to pay a higher price for work than they need do, or, in other words, that there are employers eager to make contracts at a price only possible by the readiness of workpeople to accept employment at less than trade union rates of wages. The London County Council has an army of officials to carry out such a rigorous system of inspection as shall ensure that their contractors shall supply the agreed quality of work and material, so that it cannot be said that the ratepayers would suffer by the Council's contracts being made at the lowest possible price. It follows, therefore, that the general body of ratepayers are to pay more than they need do for the benefit of a privileged class—those who receive trade union rates of wages. There could scarcely be a better proof that the trade union rates of wages are

not fair to the general community than the necessity the Council finds for its elaborate precautions for maintaining its fair wages policy. The bitter irony of the Council's fair wages policy is that the general body of workpeople pays for the privileges of the select few workpeople who are employed under the Council's contracts, and the more so as the greater part of the Council's activities is directed to services for the amenity of workpeople. If the Council pays higher prices than necessary under its contracts the tramways it maintains for workpeople cost more, and the houses it builds for workpeople cost more, and the workpeople pay more.

In compliance with the Council's reference quoted above, the General Purposes Committee has presented a lengthy report, which commences : " The solicitor has informed us that there would be no difficulty in inserting a declaration to the desired effect in the forms of tender, but has pointed out that a declaration would apply only to the time at which it was made and would not bind the tenderers as regards the future. The solicitor suggested that this difficulty might be overcome by inserting, in lieu of the declaration, an express undertaking to the effect that the contractor, in addition to carrying out the Council's usual provisions as to rates of wages and hours of labour as regards all men employed on the work the subject of the contract, should, as regards all other workpeople in his employ during the execution of the contract, comply with the stipulations mentioned in the above resolution. The solicitor, however, expressed the opinion that even if such an undertaking were inserted in contracts it would not be practicable to provide for damages in case of breach thereof, as it could hardly be contended that the Council had suffered damage, but that provision might be made for the Council to have power to terminate the contract in such event and to place the defaulting contractor on the list of persons and firms from whom the Council will not receive tenders."

The report of the General Purposes Committee dis-



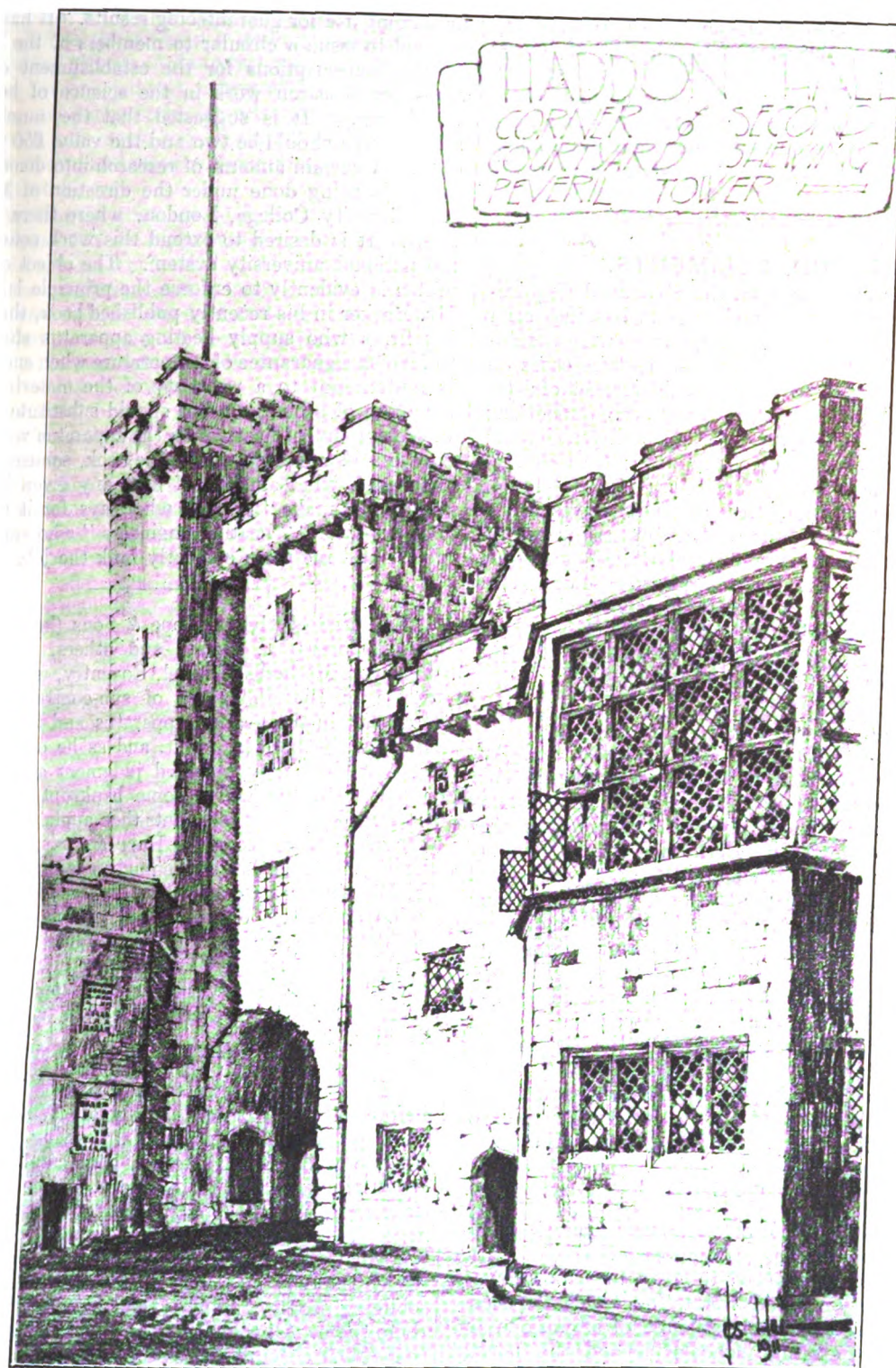
FROM A SKETCH BY MR. JOHN MACGREGOR, PUGIN STUDENT, 1912.

cusses the practice of the Government departments and their methods of enforcing the observance of the fair wages clauses as well as certain recommendations of the Council's Store and Contracts Committee, which were intended to substitute for the policy that all tenders for stores should be open to public competition a system of lists of approved firms. These recommendations were, however, referred back by the Council on February 6, 1912, but are to be brought forward again in a revised form though to the same effect.

These recommendations are backed by the General Purposes Committee, who say "we can conceive no better way by which the Council can press to a conclusion its evident determination to exclude unfair employers of labour from sharing in its contracts." All the objectionable features of a list of favoured contractors are to be permitted a chance of developing because the maintenance of the fair wages policy is found impossible if contracts for public work are to be open to public competition. Certain limited bodies of workpeople and a

certain limited number of employers are to be favoured to the exclusion of other workpeople and other employers in the same avocations and business. And the general community is to pay for the exclusive privileges granted to the favoured few. This is the outcome of the fair wages policy as conducted by the London County Council.

There is apparently an attempt to provide a professed compliance with the principle of open competition by a proposed standing order that, except where otherwise provided, all tenders shall be invited by advertisement. But the method of advertisement as recommended by the Stores and Contracts Committee is: "That advertisements be inserted twice a year in the principal trade and daily papers, and also each week in the *London County Council Gazette*, inviting applications to tender for the supply of stores and for general maintenance contracts arranged by the Stores and Contracts Committee (except printing, bookbinding, coal, and coke, and such other contracts as the Council may from time to time deter-



FROM A DRAWING BY MR. JOSEPH HILL, SUBMITTED FOR PUGIN STUDENTSHIP, 1912.

mine); that applications be received at any time from firms desirous of tendering and be immediately considered; that, subject to the result of the usual inquiries as to capacity, conditions of labour, &c., being satisfactory, the name of the applicant be at once placed on the appropriate list or lists, which shall also include such other known satisfactory firms as the Committee may consider desirable; and that forms of tender be sent, as issued, to all firms on the list or lists concerned. That, in the event of the number of names on the list in any case being insufficient, the Council do reserve the right to invite tenders by issuing a further advertisement."

Thus will be ensured a list of favoured contractors, and a "black list" of other contractors is provided for by the following proposed standing orders: "(ii) No contract shall be entered into with any person or firm who has been proved, when executing a contract for the Council,

to have infringed the conditions as to fair wages imposed in such contract. (iii) There shall be inserted in the instructions for tender issued in respect of every contract a clause to the effect that no tender will be considered from any person or firm who has been proved, when executing a contract for the Council, to have infringed the conditions as to fair wages imposed in such contract."

For "works of construction, repair, or maintenance of buildings, or of engineering works, whether civil, mechanical, or electrical," a list of rates of wages and hours of labour is prepared by the Council, which must be observed by all contractors, who, in the event of a breach of the contract conditions enforcing such rates of wages, are to "pay to the Council as liquidated damages, and not as a penalty, the sum of £5." For the employment of a workman beyond the stipulated number of hours the contractor is to be mulcted in the payment

of "five shillings per hour for every hour during which, on each day, each such workman shall be employed by the contractor beyond the maximum number of hours prescribed." No matter if an urgent necessity arises for continued work to avoid a catastrophe, the workman must down tools when his time is up. Sub-letting is also prohibited, except by permission and under rigid conditions, and for a breach in this case the "liquidated damages" is a sum of £200.

NOTES AND COMMENTS.

An important Memorandum upon the Structural Requirements of the Factory and Workshop Acts has just been issued by the Home Office, which epitomises the regulations and makes recommendations in certain cases to which the Factory Acts do not apply in respect of: (1) Means of escape from fire; (2) sanitary accommodation; (3) lavatories; (4) meal-rooms; (5) general ventilation; (6) air space; (7) floor space; (8) lighting; (9) temperature; (10) floors; (11) walls and ceilings; (12) stability of buildings; (13) basements. An appendix gives some additional notes with regard to the structural requirements of the Factory and Workshop Acts, and of the Regulations and Special Rules made under them in the case of certain specified manufactures. A second appendix gives the form of model bye-laws issued by the Local Government Board with respect to the provision of means of escape in case of fire in certain factories and workshops.

A brochure on "Municipal Art Galleries and Art Museums: their scope and value, with special reference to the needs and opportunities of Manchester, and containing plans of the present proposed Manchester Art Galleries," written by Mr. Bernard Douglas Taylor, excellently and critically discusses the part that is and should be played by such institutions, and the position that should be taken by the art galleries of Manchester. Especially good is the author's expression of view on administration, in which he rightly advocates the installation of a responsible expert director, who should be, to a considerable extent, autocratic. Comparison is made between the accommodation possessed by the Birmingham Art Gallery with the cramped and inadequate space occupied at present by that of Manchester, and thus a telling argument is advanced for the early prosecution of the long-delayed scheme for the new galleries at Manchester.

The adoption by the London County Council of the principle that the maximum number of scholars in a class-room should be reduced to forty in senior departments and to forty-eight in infants' departments, necessarily involves a considerable amount of alterations and additions to the existing schools beyond the normal increase of accommodation required to meet the growth of population, and an arrangement has been made between the Accommodation and Attendance Sub-Committee of the Council and the Board of Education for a scheme by which the work entailed shall be spread over fifteen years, during which it is estimated that an expenditure of £5,150,000 will be required in the modernising of old schools and the erection of new ones. The rapid and continual advance of ideas amongst educationists of the essentials of a satisfactory school emphasises the desirability of using in the erection of school buildings less permanent methods of construction than have been customary. It is stupid to build schools that will last a hundred years when they are hopelessly out of date in twenty.

The Institution of Heating and Ventilating Engineers has, on the suggestion of Mr. A. H. Barker, appointed a committee of the Institution to consider the methods at present in vogue of calculating heat losses from buildings,

especially in their relation to the corresponding methods in current use for guaranteeing results. It has also been decided to issue a circular to members of the Institution inviting subscriptions for the establishment of scholarships for research work in the science of heating and ventilating. It is suggested that the number of the scholarships should be two and the value £50 per annum each. A certain amount of research into domestic engineering is being done under the direction of Mr. Barker at University College, London, where there is a small plant. It is desired to extend this work considerably in the national university system. The object of the committee is evidently to enforce the principle laid down by Mr. Barker in his recently published book, that engineering firms who supply heating apparatus should decline to furnish a guarantee of temperature when such guarantee is tantamount to a warranty of the materials and construction of a building, but should substitute a guarantee of the amount of heat which the apparatus would furnish. As we said in our review of the book, someone has got to determine what amount of heat any given building will require to make the man who pays for it comfortable. The soi-disant "heating engineers" who supply boilers, pipes, and radiators evidently funk the job.

The case of Henry Hope & Sons (heating apparatus manufacturers) v. Goode and others, trustees of the Wesleyan Methodist Chapel, Coventry, is one more illustration of the difficulties of sub-contractors. Messrs. Hope put in the heating apparatus and the trustees paid Randall, the builder, for it, and as he did not pay it to Hope & Son they obtained judgment against him, but as he meantime had become bankrupt, judgment was not signed. The respondents then applied to the trustees, who declined to recognise Hope & Sons, and repudiated liability. An action was brought against the trustees in the Birmingham County Court, where the judge said the action could not be maintained, and gave judgment for the defendant trustees. Hope & Sons appealed to the Divisional Court (Justices Darling and Bucknill), who reversed the County Court judgment on the ground that Hope & Sons had never released the trustees from their liability.

The case was taken to the Court of Appeal and tried before Lords Justices Vaughan Williams, Fletcher Moulton and Buckley, and in giving judgment Lord Justice Williams said he had gone carefully through the correspondence and the evidence, and he very reluctantly said that, in his opinion, the court could not interfere with the finding of fact by the County Court Judge. He, personally, was exceedingly sorry for Hope & Sons, because the only inference to be drawn was that they were obliging people who were their customers, and wishing to help them. All they had done was to oblige the trustees to have their account passed through Randall in consequence of the difficulties raised by the appellants. The judgment of the Divisional Court must be reversed, and that of the County Court judge restored, with costs here and below. Lords Justices Moulton and Buckley concurred.

ELECTRIC FANS.

THE simplicity and readiness of application of an electric fan are sufficient reason for its employment as a means of ventilation. We can touch a switch, and at once there is a whirling of fan blades and an active current of air. But the reliability and the efficiency of a fan are the result of an amount of thought, experiment, organisation, industry, vigilance, and attention that can hardly be realised unless we watch the manufacture from start to finish. An opportunity for such an experience was afforded us by a recent visit to the Witton works, near Birmingham, of the General Electric Company, Britain's largest electrical manufacturing concern, which makes everything electric, and for whose activity nothing is too

large and nothing too small. Generators up to 5,000 kilowatts are made at Witton, and also the smallest of fan motors. It has always been a leading policy of the company to extend the use of electricity not only for lighting, but also for the general industrial application of small motors, and particularly for all sorts of domestic purposes; and a new workshop of 54,000 feet area has been recently erected and fitted to accommodate the small motor and fan work.

Here we see first the machinery devoted to press work, by which all classes of sheet metal stampings are produced for the primal basis on which fans and their motors are built up. At the commencement of manufacture we find that all parts are made to standard and accurate gauge. Even the smallest motors are not treated and built as toys, but every part is, in engineering parlance, "machined or drilled to jig." It is then mechanically gauged or electrically tested after each single operation, so that when a group of parts is assembled everything goes together without hand fitting or adjustment. The accuracy and interchangeability thus resulting tends to cheapen manufacture, as well as ensuring that all parts are positively correct, so that a positive and negative fault do not temporarily correct each other to break down later.

The continual and repeated testing is the most striking feature of manufacture at Witton; thus in the making of a single armature the shaft core and commutator are each checked, tested, and assembled; coils are wound on formers and then tested for resistance, taped with silk and placed in position in the armature slots, which are lined with empire cloth and press-palm, then tested for earths, shorts or open circuit, or reversal of connections; then soldered to commutator and tested again; dipped in varnish and stove-dried twice; the commutators turned, tested finally, and then sent to stores as a finished component. As with the armature so with all the other components of a motor and fan, each individual part is tested by itself, and each assembly of parts is also tested and inspected, all work in the shop being done on the piece-work system, and before each operation is paid for the inspector must sign approval on the piece-work ticket. It is one of the paradoxes of such close inspection that the more exacting the scrutiny the fewer faults are to be found, as the workmen know precisely what will pass and work up to it. The result of the whole system is that the company is able with confidence to guarantee all its motors even to the smallest desk fan.

The completed small-power and fan motors are subjected to the following tests: The smallest motors are given a flash test at 500 volts alternating current up to 1,000 volts in the standard larger sizes; the insulation resistance is measured and must exceed 4 megohms; a running test of four hours' duration is made, after which the temperature rise in desk fans must not be more than 60° F., whilst the speed on the running test must be within 5 per cent. of normal. Periodical tests for silent running are also made in an isolated sound-proof house apart from the workshops.

It is stated by the company that great attention has been given to gaining higher efficiency in their fans by exhaustive tests of both fan blades and motors, so as to obtain either a higher air output for the same current consumption or a saving in current for the same air output, and it is claimed that whilst 12-inch desk fans frequently consume 40 watts the company's "Freezor" Liteweight takes only 23 watts, whilst their 16-inch fans take only 45 watts against the 60 watts which are usually required with other makes.

The fans made by the company and marketed under the trade name "Freezor" include desk, trunnion and bracket fans, ceiling fans, punkahs and exhaust fans, and are suitable for either continuous or alternating current of various voltage. Oscillating fans of different types are also made, which are particularly useful for application of the theory of Dr. Leonard Hill, that movement is as important as change of air in its effect on the comfort of the public.

THE SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS.

THE above Society held its annual meeting on Friday, June 28, at Burlington House, Piccadilly, W. Mr. Thackeray Turner, F.S.A., F.R.I.B.A., Chairman of the Committee, presided. The thirty-fifth annual report includes a list of more than two hundred buildings which have come before the Society in the past year. Particulars are given of the more important cases. From the report we give the following extracts:—

Abingdon Abbey, Berkshire.—The Corporation have thoroughly overhauled and repaired the beautiful thirteenth-century chimney of the Prior's Lodging, under the close personal guidance of a professional member of the Society. This interesting relic of mediæval architecture is now sound and stable. The repair was a somewhat difficult task.

Ashby-de-la-Zouch Church, Leicestershire.—At the request of the church authorities this building was visited by a professional member of this Society. His report, which chiefly concerned the nave roof and the stonework of the tower, has been adopted by the vicar and churchwardens. Towards the end of the last century two aisles were added to the nave, and drastic works of restoration were carried out. Fortunately, the nave roof and the greater part of the tower remain unspoiled. The stonework of the tower, which is of a very beautiful colour, is much perished, and the set-offs of the buttresses are loose. There is also a serious crack in the staircase wall from top to bottom. The decay of the stone is doubtless due to the proximity of the collieries and potteries, and it is this work which calls for immediate attention. The work is to be carried out during the summer of 1912 in accordance with the principles of the Society.

Old Parsonage, Eastbourne, Sussex.—With the consent of the owner, his Grace the Duke of Devonshire, this interesting building was visited by a member of the Society, who reported to the committee. With the exception of the internal arrangements, the building has not been materially altered since it was built in the fifteenth century. The walls are of flint, with stone dressings, and the latter have perished badly. The building measures about 26 feet wide and 76 feet long, and contains a large hall on the ground floor having an open fireplace. The owner has given the building to the Parish Church, and the intention is to adapt it for use as a Parish Hall. The necessary works of repair are likely to be carried out on the lines recommended by the Society.

Cloisters, Eton College, Bucks.—In spite of very general protest from individuals, and from this Society, the iron railings have been removed from the west side of the Cloisters of Eton College, and it is believed that the gradual removal of those on the north side will take place unless better counsels prevail. By action of this sort the authorities give reason to those who urge the national control of valuable ancient buildings.

Exeter Cathedral.—It is distressing to have to report that work of drastic "restoration" still continues to be carried out at this cathedral. The string course under the parapet on the south side of the nave was being renewed last summer, and the old carved heads which appeared to be quite sound were being cut out and replaced by modern imitations. Work of the same nature was in progress on the north side of the nave. Scaffolding had been erected in front of the north porch, where the masonry showed no signs of movement, and, with the exception of surface decay, was quite sound. The renewal of the west front is still in progress. The jambs of the central porch with the canopies and mouldings have been renewed. Destructive work of a similar nature to that already mentioned is also being carried out elsewhere about the building.

Hardwick Hall, Derbyshire.—Extensive work of repair has been carried on during the past year on the lines of the Society's report. The external facework and mouldings have largely decayed owing to sulphurous pollution of the atmosphere. Much has fallen at touch, and more required to be removed before any lasting repair could be attempted. But no stone, or portion of stone, has been removed which it was thought possible to preserve by chemical treatment, and the result is that the hall, though looking somewhat cleaner than before, owing to the use of these preservatives, still keeps its authenticity, both in fact and appearance. Tiles bedded in lias lime and sand, and wedged into grooves, have been employed for the greater portion of this work, but in places exposed to the action of wet or exceptional strain Birmingham patent waterproof cement has been used in place of lime. Professor Church's baryta treatment, followed by a coat of lime water or Perpetium patent fixative, has been used for the chemical preservation of the sounder sur-

faces. In this way the north and west fronts have been dealt with, and it is hoped to complete the work on the other fronts before the autumn. Serious cracks, extending in many cases from top to bottom, exist in most of the turrets. The turrets have been tied by iron tie-rods, their outer portions buried in cement-concrete, and the cracks themselves have been tied externally with tiles across the joints and thoroughly grouted up. Internally much of the work of repair has been occasioned by the decay of the oak lintels, from leaky roofs or want of ventilation. Thus in the western turret a lintel has its end completely rotted away, and is being replaced with reinforced concrete. In the picture gallery all the floor and ceiling beams were examined. They appear to have been put in green—in such a hurry was Countess Bess to finish her building—and have twisted and shrunk to an extraordinary degree; but they have been carefully attended to in the past. Such places as were overlooked have now been repaired, and the plaster floors and ceilings made good. More serious was the condition of the oak beams across the bay windows and the arches above which carry the back sides of the turrets overhead.

Hardwick Old Hall, Derbyshire.—The ruins of the older hall have been repaired simultaneously with the newer building of Countess Bess, but on different lines, owing to the different state of the buildings. No attempt has been made to repair any of the ornamental work, but the work confined to merely keeping the walls together. The trees and vegetation have been removed from the tops of walls, which have been covered with cement-concrete, covered in turn with a layer of turf. The rotten oak lintels have been replaced with reinforced concrete. The remains of the modelled plaster frieze in the "Forest Great Chamber" and modelled overmantles of other rooms have been protected by small pent roofs of tiles, grooved and copper doweled into the wall above them, and the plaster itself treated with a special lime wash.

Iffley Church, Oxfordshire.—The Norman tower was found to be in an exceedingly unsatisfactory condition: cracks had appeared in the walling of the belfry stage, near the angle stair turret, and elsewhere, and the ashlar facing showed marked symptoms of decay. Inspection by one of the professional members of the Society disclosed the fact that the bell frame—badly framed and much decayed—was in actual contact with the south wall of the tower, and was obviously doing great mischief to the stability of the structure. A report, setting out the defects in detail, with suggestions for their treatment, was sent to the vicar, who with great energy set about raising funds. The work was put in hand last June, and all that the report advised has been done, under the constant supervision of the architect.

Langport Church, Somerset.—The tower is about 80 feet high, 19 feet square internally, and appears to have been erected in the fifteenth century. It is built of coursed lias limestone. The structure was in good condition, except where the limestone was eaten away at the joints by the action of the weather. The scaling surface of the stonework was cleaned off, and in those places where the decay was deep the joints were cut out to a sufficient depth and width to take pieces of slates or tiles bedded in blue lias lime mortar; these were inserted to form a proper key for the subsequent pointing. Five coats of baryta water were then brushed over the whole surface of the tower, and the joints were filled in flush with lias lime mortar. As many as thirty to forty coats of baryta water were sprayed on to the pinnacles and niches of the belfry and ringing chamber stages.

Oakham Castle, Rutland.—The committee state that the works of repair which they advised have recently been carried out by an architect in consultation with the Society. The chief work to the fabric consisted in arresting the thrust from the eastmost bays of the two arcades which divide the hall lengthways. The massive semicircular arches spring from carved corbels in the east wall, with flat buttresses on the outside. The thrust of the arches was pushing the wall outwards, and causing serious cracks in the arches and the wall over. It was found necessary to strengthen the east wall by the removal of the rubble core rendered loose by the forcing of the wall outwards, and to rebond the outer and inner faces together with blue lias lime concrete—from the foundation upwards. The wall was further strengthened by building up the six-light seventeenth-century window, which was a great source of weakness. The displaced stones in the arches were refixed in position, and the open joints grouted in afresh. The walls above the arches were then strengthened by the insertion of a horizontal brick lintel between the outer and inner facing stones, which will help to relieve the arch of the weight of the wall and the roof over

it. It will also act as a tie to the east wall, and prevent further movement.

Salle Church, Norfolk.—Previous to the Society being asked to undertake the necessary works of repair there had been, unfortunately, considerable restoration. The roofs over the north and south aisles afford an excellent example of the result of the Society's method of repair as against "restoration." Here are two roofs erected at the same period, and practically in the same condition of decay. The north one has been carefully repaired, and every portion of the old oak retained that was possible, with the result that it looks as if it had never been touched since its erection. The south one looks modern—as it is—for in the process of "restoration" the roof was taken down, and it requires to be closely looked at to see the few remaining old portions which are entirely lost among the new. Needless to say, the restoration work was carried out under a contract, and probably cost twice as much as the repair work. The roofs to the north porch and the south transept have also been repaired in a manner similar to that described in the case of the north aisle. The different methods of dealing with the work is also shown in the parapets on the north aisle and the nave.

Court Lodge Farm, Udimore, Sussex.—It is very distressing to have to report that this fine old house has been dismantled, and by the time this is printed will no longer be in existence. The National Trust and this Society have taken action from time to time for many years with a view to the preservation of the building. This Society even went as far as to prepare a scheme for adapting the building as cottages, but the owner could not be persuaded to agree, and a valuable record of ancient building methods and art has therefore been destroyed. It is understood that two new cottages are to be built from the proceeds of the sale of the old material.

St. Swithin's Church, Worcester.—The committee has much pleasure in reporting that the proposed scheme for the "restoration" of this church has been abandoned, and that the necessary works of repair are being carried out under the Society's auspices.

R.I.B.A. EXAMINATIONS.

THE FINAL: ALTERNATIVE SCHEME OF TESTIMONIES OF STUDY.

IN accordance with the notice already published in the "Kalendar," the alternative Scheme of Testimonies of Study for the Final Examination will come into operation at the option of the candidates in November next, and after the end of the year 1913 the existing Testimonies of Study for this examination will be abolished. Six alternative problems in design will be set by the Board of Architectural Education each year, and candidates for the final examination must submit designs in answer to at least four of these problems. These alternative problems will be published twice a year, three sets in January and three in July. This is done for the convenience of candidates, but it must be distinctly understood that the time for sending in the designs in answer to these problems is strictly limited. Thus the designs for Subject IV. must be sent in to the Secretary R.I.B.A. by August 31, 1912; those for Subject V. by October 31, and those for Subject VI. by December 31. (This time will be extended for students in the Colonies; see dates following list of subjects below.)

The drawings must be on imperial sheets and candidates must affix their full name and address to each drawing submitted.

The subjects for the second half of the year 1912 are as follows:—

Subject IV.

(a) A senate house, on an isolated site, for a modern university, to consist of a council chamber to seat sixty persons, with ante-room, waiting-room, and cloak-room, and two committee rooms each to seat twenty persons round a table. Plans, sections, and elevations to be to $\frac{1}{8}$ scale. Details both external and internal to $\frac{1}{2}$ -inch scale and shaded.

(b) A bridge carrying a road 25 feet wide between parapets over a canal 40 feet wide. The bridge may be built of brick, stone, or ferro-concrete. Drawings to be to $\frac{1}{2}$ -inch scale and to show complete construction. Important details to 1-inch scale. Calculations to be given.

Subject V.

(a) A picture gallery in a public park, consisting of six galleries of varying size, but of not more than 8,000 sup. feet

in all. The galleries are to be arranged with cloak-rooms, &c., so that they can be used for receptions. A room for a curator and a packing room are to be included. Plans, sections, and elevations to be to $\frac{1}{2}$ scale. Details both external and internal to $\frac{1}{2}$ -inch scale and shaded.

(b) A village church to seat 300. May be in any style, but with complete details of construction. Drawings required to $\frac{1}{2}$ -inch and $\frac{1}{4}$ -inch scale.

Subject VI.

(a) A colonnaded screen, 100 feet long, joining two wings of a public building 60 feet high. The screen to have two carriage entrances through it. Shaded drawings to $\frac{1}{4}$ -inch scale with 1-inch scale details.

(b) A fire-resisting lock-up warehouse on a site 40 feet \times 80 feet, with two frontages 40 feet wide to two parallel streets. The site is between buildings so that no light can be obtained on the 80 feet sides.

The building is to have six storeys, and each floor is to be capable of sustaining a load of 4 cwt. per sup. foot. Drawings required $\frac{1}{2}$ -inch and $\frac{1}{4}$ -inch with $\frac{1}{2}$ full-size details of important parts of any steel construction.

N.B.—A sketch perspective may be included in any of the foregoing, but is not compulsory.

Dates for Submission of Designs.

	Subject IV.	Subject V.	Subject VI.
United Kingdom...	August 31, 1912.	October 31, 1912.	December 31, 1912.
Johannesburg ...	October 31, 1912.	December 31, 1912.	February 28, 1913.
Melbourne...	November 30, 1912.	January 31, 1913.	March 31, 1913.
Sydney ...	November 30, 1912.	January 31, 1913.	March 31, 1913.
Toronto ...	September 30, 1912.	November 30, 1912.	January 31, 1913.

The attention of candidates is called to the revised syllabus of the Intermediate and Final Examinations which comes into operation in November next. The syllabus is published in the "Kalendar." Attention is especially called to Subjects I., II., III. (F) of the Final.

THE MADRAS ARCHITECTURAL SOCIETY.

WITH a view to facilitate the general advancement and study of architecture, engineering, and other arts and sciences connected therewith, a Society under the above designation has been organised. The necessity for one has long been felt, and the above is the outcome of the spontaneous exertions of all those who are interested in the art. The first general meeting of the Society was held on March 15, in the Mahajana Sabha Hall, Mount Road, Madras.

The general meeting commenced at 6 p.m., when there gathered a large number of gentlemen on an invitation issued by Messrs. R. J. P. Enright and V. T. Srinivasa Aiyangar, B.A., B.C.E., of the Public Works Department.

Mr. W. J. Waghorne, F.R.I.B.A., occupied the chair.

Mr. C. L. Narasimhayya briefly explained the objects of the Society, and read out its draft rules, which called forth some discussion.

Mr. V. S. Gnanaprakasam Pillai, C.E., in a short speech, proposed Mr. W. N. Pogson, F.R.I.B.A., to be the President. The proposal was seconded by Mr. V. Daivasikhamani Pillai, A.M.I.C.E., and unanimously carried.

Mr. W. J. Waghorne, F.R.I.B.A., and Mr. W. G. Molesworth were elected Vice-Presidents of the Society.

Mr. R. J. P. Enright and Mr. C. L. Narasimhayya, B.A., B.C.E., were elected Joint Secretaries.

The following gentlemen were elected as members of the Executive Committee:—W. N. Pogson, Esq., F.R.I.B.A. (President), W. J. Waghorne, Esq., F.R.I.B.A., and W. G. Molesworth, Esq. (Vice-Presidents), R. J. P. Enright, Esq. (Secretary), M. R. Ghadi Ali, Esq., B.Sc., M.R.S.I., M.R.Ry. V. T. Srinivasa Aiyangar, Avl., B.A., B.C.E., M.R.Ry. R. Narasimha Aiyangar, Avl., B.A., B.C.E., M.R.Ry. P. A. Venkatarama Aiyar, Avl., B.C.E., M.R.Ry. S. Rajagopalaswamy Mudaliar, Avl., B.C.E., M.R.Ry. V. Daivasikhamani Pillai, Avl., A.M.I.C.E., M.R.Ry. V. S. Gnanaprakasam Pillai, Avl., C.E., M.R.Ry. P. C. Gopalaswamy Naicker, Avl., M.R.Ry. T. M. Daivasikhamani Achariar, Avl.

Mr. T. M. Daivasikhamani Achariar moved a resolution requesting his Excellency Lord Carmichael to deliver an inaugural address before his departure from Madras.

After some introductory remarks, he spoke as follows:—Gentlemen,—You are already aware that his Excellency is considered as second to none in matters artistic—the mistress art of architecture—and that he takes a very keen

interest in all matters tending to promote such arts during his all too short a tenure of office. It was only a few months ago he presided over the deliberations of experts regarding the museums and their management. He said in his opening speech that he spoke there only as an amateur. But, in fact, as one of the experts present pointed out, his Excellency's speech was a suggestive one, indicative of a masterly mind. It created in the minds of many a hope that the deplorable gap left by Lord Napier would soon be filled up by his Excellency Lord Carmichael after a lapse of about a quarter of a century. That was not to be. Possibly we may have to wait for another quarter of a century before we could get a Governor who may unreservedly open up his mind to the public at large, as was done by Lord Napier on building matters. He delivered a series of lectures on fine art and architecture, and in the latter he deplores the lamentable plight of Madras and the crass ignorance—nay, the indifference—of the people of this Presidency on building matters and the choice of suitable styles and materials for their dwelling-houses. He also touched upon the various styles of buildings as best suited to the conditions and the requirements of the Indians, and chalked out an even course for the builders and designers of Indian buildings. He exhorted the Indians to consult an expert architect or a master builder to assist them in planning their houses according to the modern needs. Gentlemen, he readily admitted the insuperable difficulties attached to the planning of Hindu houses in consistency with the principles laid down by the great "Manai Shastra," or the Hindu Science of Building, which enjoins on all Hindus to adhere to some particular dimensions, style, and the number of pillars, valleys, openings, &c., on pain of disastrous effects on the delinquent owner.

Gentlemen, we find, however, that these sorts of obstacles were overcome by some of the architects, such as Messrs. R. F. Chisholm, Brassington, and others, who have successfully adapted Anglo-Indian styles in designing some important buildings. These gentlemen and other toilers in the same field laboured with a diligence beyond praise, but the work was too great for individual exertion, and much of their work remained fragmentary and incomplete.

Gentlemen, the question of paramount importance to-day is not who is to be blamed for the existing state of things, but what policy is to be adopted so that, as far as possible, the Madras Presidency may be spared some of the worst features of the modern hideous styles with the help of the great traditional architecture which she still possesses. The indigenous architecture, including town-planning and temple-building, in India generally flourished under the patronage of kings and princes, and the decay or degeneration which began in the time of Aurangzeb or Raja Raja Chola of the Dravidian country still accelerates.

Now, gentlemen, the signs of the times are very favourable both to the European architects and to the Indians of this Presidency. Madras is passing slowly through a period of transition, the ultimate upshot of which none can foresee. There has been a vast change from the Madras of those days to the Madras of to-day. What was prohibitive to the conservative Hindu mind some twenty years ago is recognised as almost a necessity to-day. It only requires some ingenuity and effort on the part of the designer to reconcile the Indians to the European methods of designing, and Hindu gentlemen are perfectly satisfied provided they are given a sufficient accommodation and a presentable frontage consistent, as far as possible, with their traditions. It is high time now, gentlemen, that we should work in that direction, and attempt at the refining and remodelling of the domestic architecture of the Hindus in this Presidency by teaching them to aim at simplicity and dignity, availing ourselves to the full extent of the magnificent resources of the country as regards materials and workmanship, rather than leave them to dabble with all styles and proportions, only to puzzle the historians of a future age. We are the custodians of our own age, and posterity will rightly blame us if, by our own neglect, we forego the opportunity of sitting at the feet of the best authorities on building matters and listening to the words of wisdom issuing from their lips. We have now the good fortune to be able to listen to the expositions of the learned men of the profession. How could we Indians achieve the end in view unless we invite the best exponents of the art like his Excellency, and draw inspiration from their edifying speeches? This is not only one of the best ways of educating public opinion, but also of fostering the growth of a good architectural training in this country on indigenous lines.

In support of my view, I beg to quote from the annual report of the architectural work in India for 1909-10 by

Mr. J. Begg, F.R.I.B.A., the head of the architectural profession in India, who is bestowing his attention to the training up of many Indian architects. The scheme which he proposes is a different one, but the necessity for the remedial measures suggested by him is clearly dealt with in it from a different standpoint of view. He says: "There are at present so comparatively few good architects' offices in India that we can do but little, but what little we can it behoves architects to do in the direction of encouraging the growth in the country of the profession on indigenous lines. Whatever we can do to induce members of the better educated community to put their sons into the profession will be all for the good of the country, and will tend to open up careers for a number of those who at present flood the overcrowded professions of the law, medicine, or who seek employment as Government clerks. Moreover, it would tend in the right direction in the interests of the profession itself. It would help to create a class of efficient assistants, the want of which in this country is perhaps the cause of the greatest difficulties with which the architect in India has to contend, whether he be in Government employment or in the private practice. It is our own work that we have to regard as our first care. I am inclined to think that a special effort should be made at this juncture to induce Indians to come forward."

Gentlemen, as this Society intends also to supply the gap in the present architectural education in this Presidency, we shall hope for a day when we may confidently anticipate the gradual growth of a new culture and style combining all that is best in Eastern practice and ideals, revitalised by transfusion with Western ideas through the instrumentality of this Society, for no one here can deny that societies of this kind may not serve to attain perfection and make one reach the height of one's ambition. The very desire in one to excel when accompanied by earnest work must tend at least to improvement, and every step gained in the ladder of knowledge will give additional pleasure, for the higher one mounts the more beautiful and the more extended does one's view become.

The meeting accepted the resolution unanimously, and the Chairman was authorised to communicate the resolution to his Excellency.

Mr. Pogson, F.R.I.B.A., President-Elect, rose amidst loud cheers, and made a happy and interesting speech, in the course of which he thanked the members for the honour done to him in electing him as President. He emphasised the importance of harmonious co-operation of both the architect and the engineer in this country, inasmuch as the architect could not do without the engineer any more than the engineer could do without the architect. He hoped that under the auspices of this Society classes would be started for architecture and the allied arts, and looked forward to the final affiliation of the Society with the Royal Institute of British Architects, London. The Society should for this, in his opinion, look forward for help to the Fellows of the Royal Institute of British Architects, one of whom was the Society's Vice-President, Mr. W. J. Waghorne. He then dilated upon the importance at present of the study of different styles and upon the facilities afforded therefore by the new city of Delhi, which he hoped would be a living history in brick and stone of the happy fusion of India and England. He then referred in thankful terms to the energetic endeavours made towards the formation of such a unique Society like this in India. He thanked all present for their co-operation in the work of the Society, and gave an assurance to contribute everything in his power towards the well-being of the Society. In concluding, the Chairman referred to the excellent work which was being done by the Royal Institute of British Architects, London, and the Architectural Association, London, and he felt sure that this Society also would receive every possible support from them. He laid stress on the importance of co-operation and earnest individual research, without which nothing materially beneficial could be accomplished by way of improving so noble an art as architecture.

The objects of the Madras Architectural Society are:—

(a) To promote the general advancement of architecture, engineering, and other arts and sciences connected therewith.

(b) To afford facilities for the study of architecture and to serve as a medium of friendly communication between the members and others elsewhere interested in the progress of architecture.

(c) To educate public opinion on the question of adopting suitable styles tending greatly to promote the domestic convenience of the citizens.

(d) To establish as far as possible uniformity of practice.

(e) To take such measures as to enable the public to distinguish architects as qualified by a competent authority from those not so recognised.

(f) To standardise the scale of charges for professional aid.

(g) To establish and maintain a library and a collection of designs, prints, &c., of interest, and a model-room for the use of the members.

THE UNIVERSITY OF SHEFFIELD.

THE results of the June examinations, 1912, in the Department of Architecture are announced as follows:—Diploma of Architecture.—First class, John C. P. Toothill; second class, Harry B. S. Gibbs. Certificate in Architecture.—First class, John H. Odom; second class, Henry B. Leighton and George A. Booker (on completion of design).

As the course for the diploma is a five years' one, and as the Department has now been open for five sessions, the Diploma in Architecture of the University of Sheffield is now awarded for the first time. The external examiner was Professor F. M. Simpson, F.R.I.B.A.

ILLUSTRATIONS.

ADDITIONS TO THE SURVEYORS' INSTITUTION.

THE opportunity for extending the building of the Surveyors' Institution arose through the formation of the new street on the south side of Great George Street. The new frontage thus acquired added to the site an oblique piece of land which it was not altogether easy to incorporate in the building as already arranged. The architect, Mr. Paul Waterhouse, has lengthened the big lecture hall on the first floor, and in order to take advantage of the increased space for the extension of the Council room adjoining he has finished the enlarged room with a bold bow window. This room is panelled throughout in oak. Beneath the Council room are additional offices for the staff and a new room for the Secretary is placed beneath the end of the lecture room. The builder is Mr. James Carmichael, of Wandsworth, and the work has been carried out under the superintendence of Mr. D. Kennedy, clerk of works. The following specialists were employed:—Stone and wood carving, R. Bridgeman & Son; fibrous plaster, G. Jackson & Sons; casements, Crittall Manufacturing Co.; sanitary goods, Shanks & Co.; marble columns, wall tiling and parquet, Art Pavements and Decorations, Ltd.; wrought ironwork, Hart, Son, Peard & Co.; heating, J. Jeffreys & Co.; electric lighting and telephones, Belshaw & Co.; chimneypieces and grates, Shuffrey & Co. and Bratt, Colbran & Co.; Council room tables and chairs, Maple & Co.

A KENSINGTON INTERIOR.

THE picture from which our illustration is taken is exhibited in this year's Royal Academy, and has been purchased by the trustees of the Chantrey Bequest. It is interesting also as an example of interior domestic architecture.

THE NEW OXFORD CIRCUS, LONDON.

THE corner of Oxford Circus shown is occupied as the premises of "Madame Louise," and is intended to be reproduced on the other angles as shown in Mr. Henry Tanner's drawing which hangs in the Architectural Room of the Royal Academy this year.

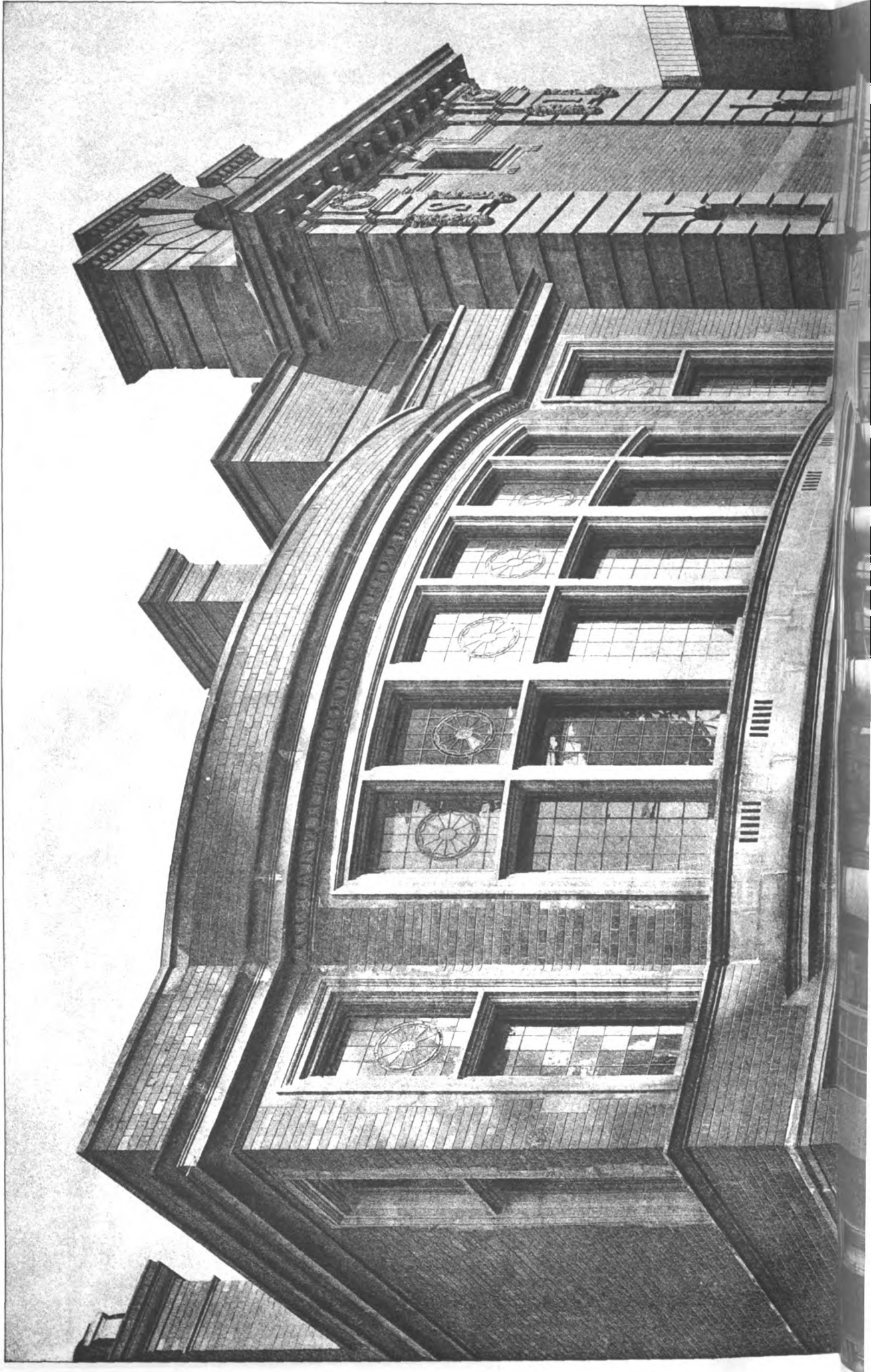
ENGLISH INTERIOR DECORATION.

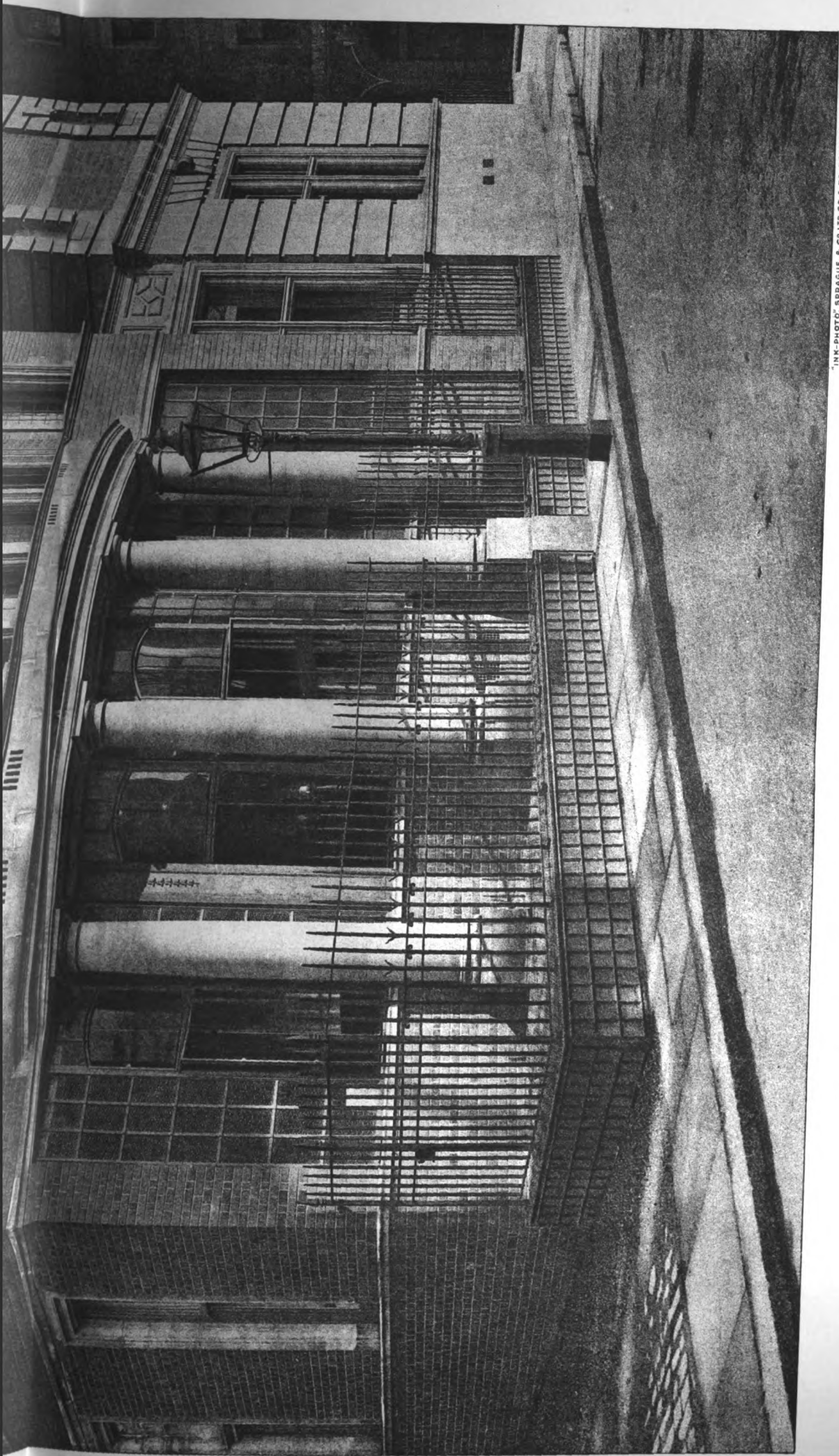
THE drawings of No. 17 Fleet Street were made in connection with Mr. Bullock's series of articles on "Interior Decoration," now appearing in our columns, and will be found described in a chapter on British work which will subsequently appear.

It has been decided by the Cathedral Board, which was constituted for the building of the new Cathedral of St. Paul, Dunedin, New Zealand, to proceed with the building of the nave as soon as the necessary details and specifications can be provided by the architect, Mr. Edmund Sedding, F.R.I.B.A., of Plymouth. Otago stone will be used throughout, and as much of the local material as possible. It will be necessary to remove the existing pro-cathedral altogether.



The Architect, July 5th 1912.





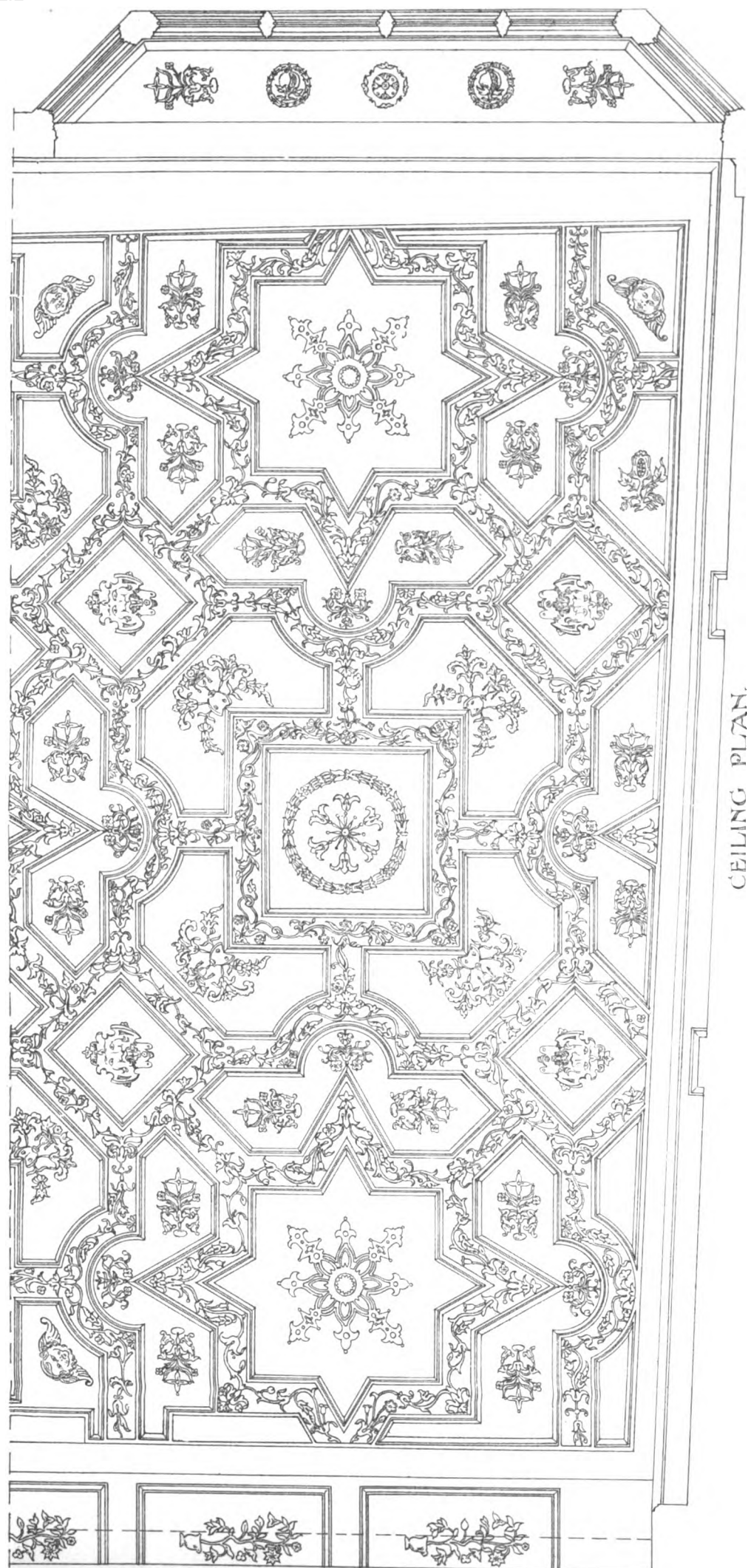
"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

ADDITIONS TO THE SURVEYORS' INSTITUTION, WESTMINSTER, S.W.
MR. PAUL WATERHOUSE, F.R.I.B.A., Architect.



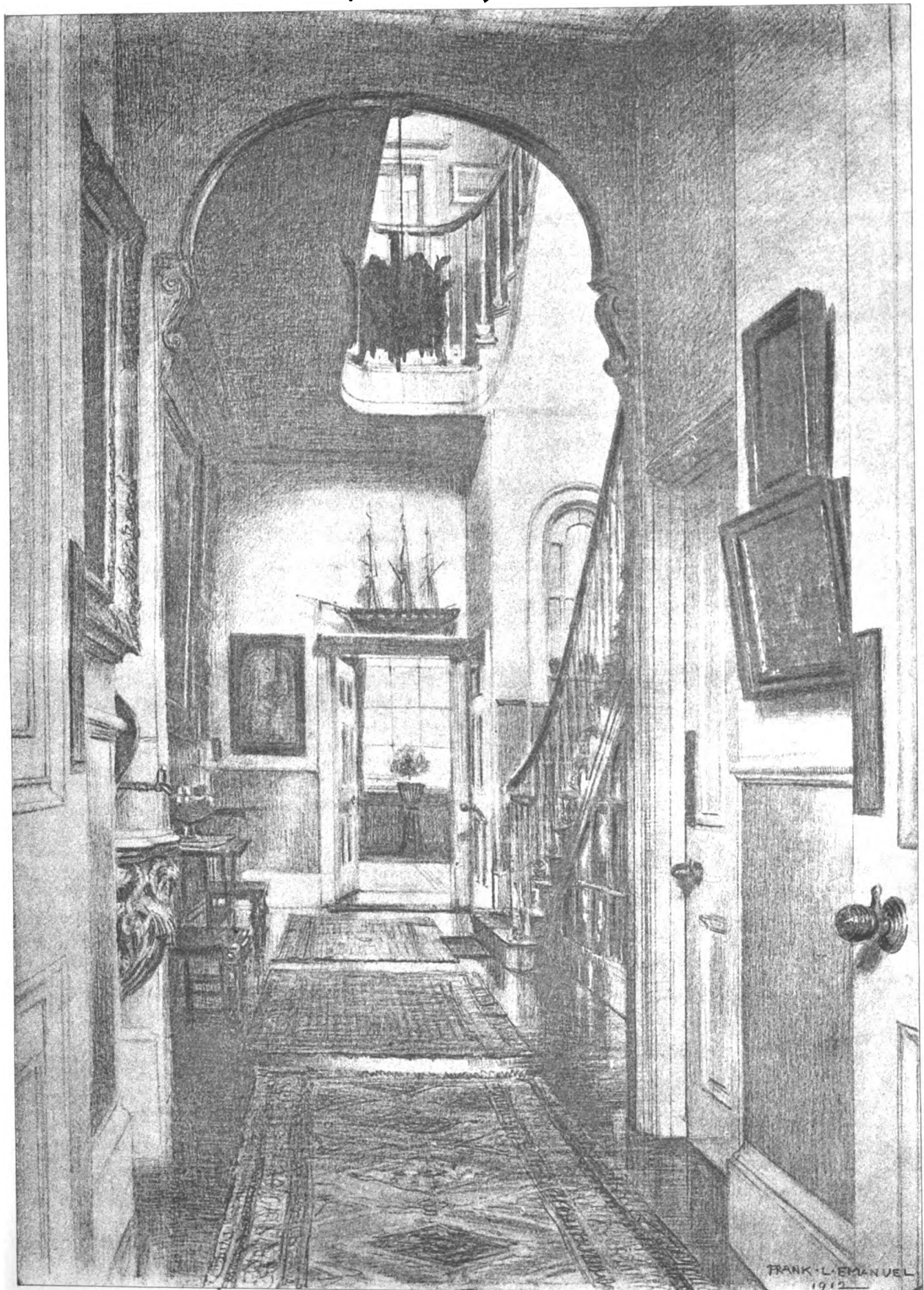
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The Architect, July 5th 1912.



INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

(Royal Academy Exhibition, 1912.)

A KENSINGTON INTERIOR.

By MR. FRANK L. EMANUEL.



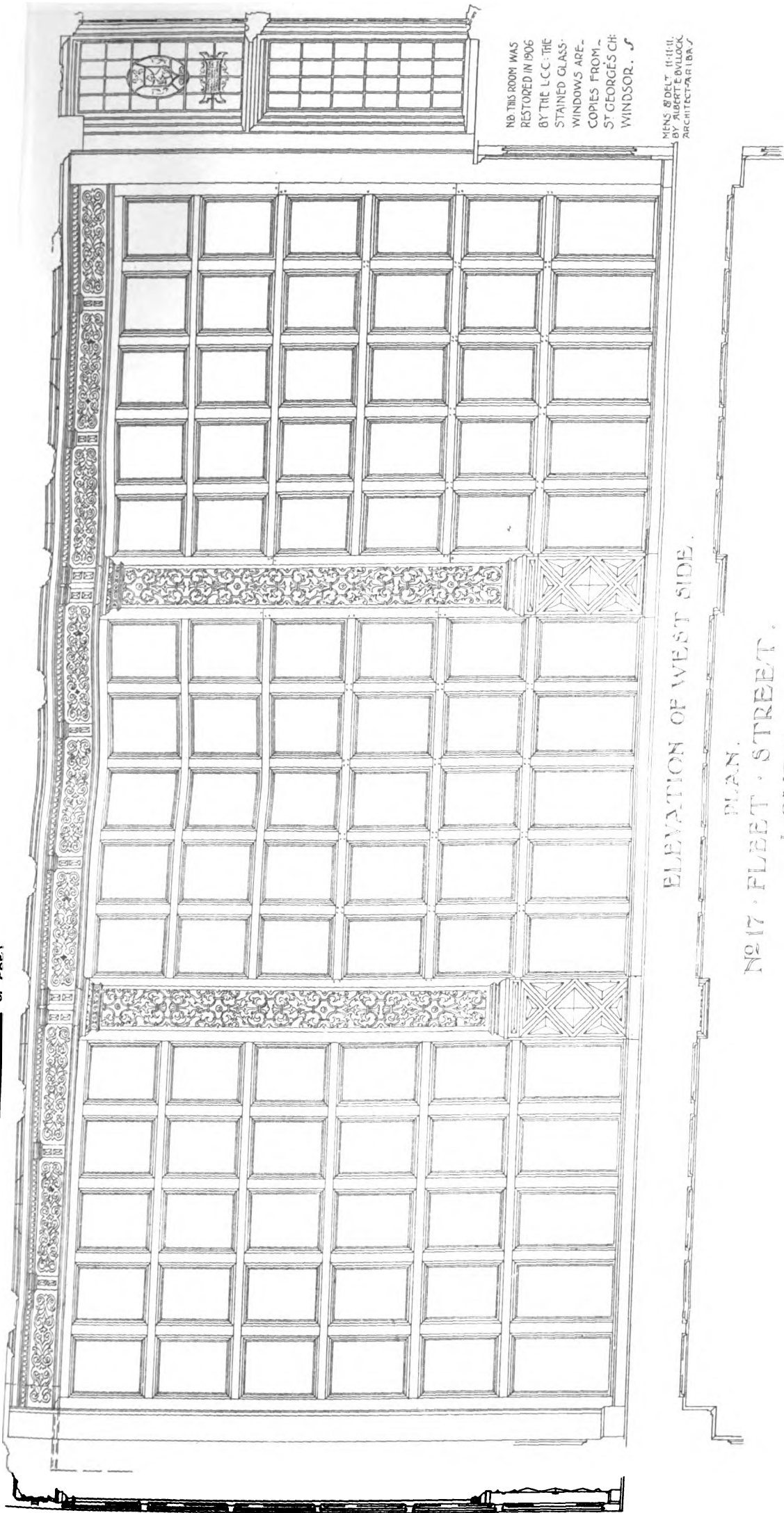
PHOTO BY A. E. WALSHAM, 60, DOUGHTY STREET, W.C.

"INK-PHOTO" SPRAGUE & CO. LTD. 68 & 70, DEAN STREET, SOHO, W.

THE NEW OXFORD CIRCUS, LONDON.

MR. HENRY TANNER, F.R.I.B.A., ARCHITECT.





NB THIS ROOM WAS
RESTORED IN 1906
BY THE L.C.C. THE
STAINED GLASS
WINDOWS ARE
COPIES FROM
ST GEORGE'S CH.
WINDSOR.

MENS. & DELT. 11-11-11.
BY ALBERT E. BULLOCK,
ARCHTCT-AR. I.B.A.

ELEVATION OF WEST SIDE.

PLAN.

NO. 17 FLEET STREET,
LONDON.

PHOTO-LITHO SPRAGUE & CO. LTD. 69 & 70 DEAN STREET, BOMBAY.

ENGLISH INTERIOR DECORATION.

From
Drawing by Mr. ALBERT E. BULLOCK, A.R.I.B.A.

1111

INTERIOR DECORATION.—II.

By ALBERT E. BULLOCK, A.R.I.B.A.

FRANCE.—II.—THE EIGHTEENTH CENTURY AND AFTER.

(Continued from last week.)

STYLE has been said to be the elimination of the inharmonious and the unfit. One may however so rigidly apply the principles of a style as to lose much of its spirit and charm—the rhythm and decorative effect of its purpose—resulting in hard unsympathetic lines, even in the ornament and other parts intended to relieve the sense of monotonous repetition of features and parts. One rarely finds in French decorative work anything incongruous; each example taken on its merits presents a theme, complete in itself, testifying to the decorative instinct of the artist, his sense of proportion and knowledge of the limitations of his system.

Every style has its own stages of development, and perfection is not attained without that toning down which systematic elimination gives. The art lies in the knowledge of the extent to which such elimination shall extend. There is in the history of the art of any nation no century which more clearly exemplifies this theory than that of the period with which we are about to deal, which commences with the Régence and ends with the Empire styles of French art.

It would seem that the age of Louis XV. aimed at obliterating the work of his predecessor in the desire to produce the exuberant pleasure houses and palaces, the decorations of which frequently exhibit great want of repose. It was not until the latter half of the reign that decoration really settled down to a systematic expression worthy of a great nation, which was at once a refined edition of Louis XIV. work, chaste in detail and dignified in design, under the commanding genius of Gabriel.

The Petit Trianon, begun in 1762, and Rousseau's Hôtel Salm Salm, completed in 1786, give just those qualities which make for a permanent living architecture, and indicate the high-water mark of the French development in art. The decadence depicted in much of the later work must be put to the credit of the political struggles which followed, such work being carried out under the direction of men of the stamp of Boulée and Chevalier. The triumphal return of the soldiers from Italy after the conquests referred to in the last article was akin to the incident of biblical record of the Israelites' return from viewing the "Promised Land." The new art was taken up with zest. Its application was at first direct, inasmuch as native talent from Italy and elsewhere was invited and encouraged in France. The establishment of Colbert's school at Rome under Errard, de Troy, and their successors, however, gave the opportunity to students to train on the native soil the best examples, prior to their employment on the national monuments where "le style Français" was gradually developed. The activity of the François Première period was eclipsed by Louis XIV. The glory of Meudon was surpassed by Le Brun at Versailles. The evolution from the transitional stage has been traced by other writers from the old fort of Langeais (1460) to Gaillon, Blois, Azay-le-Rideau (1526) and other château of the Loire valley.

It is characteristic of French architecture, and decoration in particular, that throughout all the periods of the Renaissance art there are traceable certain recurring forms of ornament and decoration. It has been shown elsewhere that the so-called Mansart roof was practised at the Louvre by Lesnot; the familiar oval ornament which carries a festoon practised by Gabriel had appeared with Perrault's work there, and the panel treated with small mitred angle breaks so frequently used in Louis Seize decorations existed in a coarse form at Alençon. Throughout the period of Louis XV. one may trace the influence and the repetition of many exact features from Louis XIII. examples and earlier, only more highly floreated, in the rocailles and scrolls. The same may be said of the planning of rooms, especially bedrooms, which latter retained the alcove partitioning from very early times throughout each era even to modern days.

The example of the Henry IV. room, for instance, illustrated in the last article, is typical of the plan referred to here. These bed recesses are open to the room, but closed in on the other three sides, there being a passage on one side forming the entrance. This room forms one of the earliest examples in which embossed and painted leather was used as a decoration. The use of leather was adopted very largely in later decorations, being carved and moulded into various shapes and patterns, in much the same manner that papier

maché was in England in the sixteenth century for ceiling decoration, before plaster came into general use.

The opening years of the eighteenth century witnessed a series of European wars consequent upon the mistakes made by Louis XIV., which resulted in the formation of the Grand Alliance of England, Holland, and Austria. Of the wars which ensued the most decisive was that of Blenheim, when Vienna was saved by Marlborough and Gibraltar fell into the hands of the English nation. The Peace of Utrecht, signed in 1713, recognised the Hanoverian succession of England, settled for a time the general European status, and was the signal for much colonisation in Canada and elsewhere.

In the latter part of this reign the elderly Fleury undertook the task of steering the country through a maze of threatened wars and intrigues, France being at peace with England, partly from a necessity which was patent to both Fleury and the Parlement, and also because his policy was never of an aggressive nature, which necessity was the national deficit of 78,000,000 livres bequeathed by Louis XIV. upon his decease. Cheese-paring usually leads to cheap art, and the striving after a sumptuous effect which is so distinguished a feature of the productions of the reign of Louis XV. was doubtless largely due to this cause, together with the reaction consequent upon the absence of the former controlling power in matters relating to the arts of decoration and design. The period was largely the opportunity of the painter, as is evidenced by the tapestries of Boucher and others. In the following reign strong verticality is observable in the architecture, the decorations, and the upholstery.

The three reigns from Louis XIV. to Louis XVI., however, really form one organic style, the change apparent in the reign of Louis XV. forming the transition, from which the terms Régence, Rococo, and Rocaille express the feeling of the art. Much of the early work was restored in subsequent years, as, for instance, Goujon's vault to the great staircase at the Louvre built in 1662, which was restored and completed by Félix Duban as late as 1849-53 (see also *The Architect*, 1894, November 23, p. 330). While the luxuriance of the early years of the century is responsible for the appellations above referred to there was much simple work done also in panelled rooms at Versailles, Fontainebleau, the Petit Trianon, and the Louvre, which strike a quieter note. During the Régence of Philip of Orleans (1715-22) the chief exponents of the style were Robert de Cotte and Germain Boffrand. There are many examples of very good work of this period of the type of Madame Du Barry's residence at Luciennes, &c. This was followed by the Rocaille style practised by the decorator Nicholas Pineau and his son Dominique, the typical features of which are the sculptured dado mouldings and the frequency of mirrors. At the Château de Rambouillet the Petit Salon is carved in wood in this style.

Pineau went with Le Blond to Russia in 1716 and continued the work at Potsdam upon the death of Le Blond in 1619, where he carried out, *inter alia*, the decorations to the music room in the Altes Schloss. He returned to France in 1729 and worked in the Salle d'Hercule, Versailles, which is one of the last instances of the extensive use of marble as a decorative material practised in the reign of Louis XIV. under Le Brun and Mansart. The theme here is green and gold on a white background. There were two large paintings by Paul Veronese, which formed part of the decorative scheme and were set in frames by Verbrecht and supported by gilt-bronze ornaments by Antoine Vassé, a pupil of Puget. One of these pictures is now at Fontainebleau and the other in the Salon Carré, Louvre. An example of Pineau's work also exists at the Hôtel d'Evreux (now the Elysée), begun by Mollet in 1718. Pineau's decorations were carried out when Madame de Pompadour was owner of the residence. He was a great friend of Jules-Hardouin Mansart and worked with his son Dominique in 1750 at Asnières on Mansart de Levy's château for the Marquis de Voyer; and the Hôtel de Luxembourg contained some of his work and later received alterations by Carpentier, a pupil of Jacques Jules Gabriel. The grand salon here was decorated by Natoire and Hallé. Both these buildings have since been divested of their decorations.

The Hôtel de Soubise contains many rooms of this period. In 1702 Gabriel Blanchard worked there, Natoire from 1736-39, and the sculptors Lambert-Sigisbert Adam and Jean François Lemoyne about the same time executed the groups in the Salon Ovale. The interior decorations were in active progress from 1702-45. A bedchamber from this building indicates the prevailing method of treatment and is taken from César Daly's work. Boffrand, who built the façade to the Arsenal in 1718, succeeded Delamare in the decorations to the Golden Gallery at the Hôtel de Toulouse, which was

commenced by Robert de Cotte in 1717. The decorations to the Salle des Manuscrits at the Arsenal date about 1745.

(To be continued.)

ARTISANS, CABINET MAKERS AND TRADES.

Jean Cousin (Painter of Glass and Sculptor)	1500-1589
Bernard Palissy (Huguenot Glass Painter)	1510-1588
Claude Mollet (Gardener to Henry IV.)	-1613
Claude Ballu (Jeweller)	1615-1678
Jean Lepautre (Designer)	1617-1682
César Bagard (Wood Carver)	1639-1709
André Charles Boule (Chief Cabinet Worker)	1642-1732
L. Vander Meulen (Carver)	fl. 1645
Guillaume Dupré	fl. 1650
André Charles	fl. 1648
Daniel Marot (Designer and Architect)	1650-1700
Claude Ballin (Goldsmith)	1660-1754
Jean Tijou (Metal worker) in England from	1687-1711
C. C. Saumier (Cabinet Maker)	-1752
Thomas Germain (Architect, Sculptor and Goldsmith)	1673-1748
Jacques Caffieri (Cabinet Maker)	1678-1755
P. E. Babel	-1761
François Richard Lalonde (Cabinet Maker)	1685-1765
Charles Cressant (Mounts for Furniture)	1685-1768
J. F. Oeben (Cabinet Maker)	-1767
Le Sieur Dagly (Gobelins, Japan Ware)	fl. 1713
La Jone (Painter of Architecture)	1687-1761
Nicholas Lancret (Painter)	1690-1743
Jean Dubois (Cabinet Maker)	fl. 1760
Vernis-Martin (Carriage Painter)	1701-
A. Weiswiler (German Cabinet Maker)	-1778
Jean Jacques Caffieri (Cabinet Maker)	1725-1792
Ferdinand Berthoud (Swiss Jeweller)	1727-1807
Jean François Riesener (Cabinet Maker)	1735-1806
André Jacques Roubo (Cabinet Maker)	1739-1791
Salembier (Decorator)	fl. 1775
Le Quay (French Gilder)	fl. 1775
J. E. Leleu (Cabinet Maker)	fl. 1775
Jean Guelder Oppenord (Cabinet Maker)	fl. 1775
Roucel (Jeweller)	fl. 1775
P. Gouthière (Metal Worker)	1740-1806
David Röntgen (German Cabinet Maker)	1743-1807
Thomire (Metal Worker)	1751-1843
G. C. Erasmus (Dutch Furniture Maker)	fl. 1780
Martin Carlin (Cabinet Maker)	fl. 1780
François Gamain (Ironworker)	fl. 1760-1799

THE NAMES OF ARTISANS OF WHICH THE DATES ARE UNCERTAIN.

François Chef-de-Ville (Gem Cutter)
 Domenico Cucci (Joiner)
 Claude de Villers (Silversmith)
 Bailly (Tapestry Weaver)
 Philibert Balland (Embroiderer)
 Etienne de la Belle (Engraver)
 The Camaye (Tapestry Weavers)
 The Comans (Tapestry Weavers)
 Jean la Croix (Tapestry Weaver)
 Debonnaire (Silversmith)
 Galle (Cabinet Maker)
 Simon Jaillot (Ivory Carver)
 The Kellers (Bronze Workers)
 François de la Planche (Flemish Tapestry Weaver)
 Louis Dupont (Tapestry Weaver)
 Pierre Dupont (Tapestry Weaver of the Savonnerie)
 Simon Fayette (Embroiderer)
 Gachetti (Florentine Lapidary)
 Jans (Tapestry Weaver)
 Alexandre Fortier (Jeweller)
 Van Kerchove (Dyer)
 Jacques Somer (Parquetry Worker)
 J. W. Meil
 Baudren Yvart (Designer of Tapestries)
 Megliorini (Florentine Lapidary)
 Merlin (Silversmith)
 Mynuel
 Warin (Master of the Mint)
 Viancourt (Silversmith)
 J. Francart (Designer)
 Pierre and Jean Lefebvre (Flemish Weavers)
 Simon Lourdet (Tapestry Worker)
 Mosin (Tapestry Worker)
 Remy (Embroiderer)
 Pierre Gabriel Berthault (Engraver)

Duplessis (Bronze Worker)
 Winant (Bronze Worker)
 Hervieux (Bronze Worker)

THE LONDON SOCIETY.

A MEETING of this Society was held at the Royal Society of Arts, Adelphi, on Thursday, June 27, when there was a discussion on Mr. Raffles Davison's paper read at the previous meeting, entitled "London as it is and as it might be." Professor Beresford Pite, F.R.I.B.A., occupied the chair.

Colonel R. C. Hellard, C.B., opened the discussion by explaining the principles on which the recommendations as to the proposed new roads in the report of the Traffic Commission have been made. In his opening remarks, he said that he proposed to consider some of the matters which affected the bulk of the inhabitants in their everyday life, and to deal with them from a practical standpoint. There had been numerous schemes for the betterment of London, but in his opinion all such proposed expenditure should be based on some utilitarian gain. There were two things absolutely essential to successful improvement. The first was a general scheme to which all improvements should conform, and the other was co-operation between the different authorities. A great deal of preliminary investigation has already been made, from which other people might draw profit. There were, for example, the annual reports issued by the Board of Trade, and particularly those for 1910 and 1911, in which road plans for the whole of London are given. The preliminary investigations which had to be made before such a road plan could be prepared were very numerous. In those reports, he said, a general plan embracing the whole of the London area was for the first time laid before the public. In every case the ground had been walked over very carefully either by himself or by Lieutenant Fishbourne, R.E. He was satisfied that there were no very serious engineering difficulties involved along any of the proposed lines; but they might be blocked by new buildings at any moment. He deplored the production of mere paper schemes, the preliminaries of which had not been worked out on the ground. In one instance, the proposed road was represented by a geometric circle, and would be absolutely impossible to carry out. Such schemes distracted attention from properly-thought-out ones. The only chance for success was to get each portion of the general plan accepted in principle by all those interested, and to concentrate attention on it and to secure the co-operation of all concerned. A few years hence, if no such scheme were adopted, the town-planning schemes would have matured independently on local lines, regardless of the general requirements. Of the 125 miles of new road suggested, something like forty miles passed through areas of town-planning schemes now under consideration, while at least another twenty lay across open agricultural ground. Besides these sixty miles of comparatively inexpensive road that might so easily be made, some twenty-five miles of road was already under the consideration of the authorities—namely, the Brentford by-pass, the Cromwell Road extension, the Croydon by-pass, and the Kingston and Surbiton by-pass. These figures reduce the original mileage to very much more negotiable proportions, and should allay exaggerated estimates of costs. It was unfortunate that the first road to be considered should be the one starting from Cromwell Road and going on to Brentford. The cost of this was estimated at £1,750,000, although the road was only ten miles long. In this case each of the two miles to be carried out in the County of London would cost £500,000, the next two miles £250,000 each, and the remaining six miles £250,000 altogether. So much of the roads suggested by the Board were to be made in the country that it might be safer to judge its cost from comparison with the last six miles just mentioned. As regards the improvement of existing main roads, it was of great importance that building lines should be laid down, so that when leases fall in advantage might be taken of setting back the frontage to conform to the scheme of widening. This suggestion applies particularly to villages and to such roads as are flanked by forecourts or gardens and by one-storeyed shops. There are many other points which might be advocated, such as the reservation of prominent sites for important buildings and the formation of grass verges and the planting of trees and shrubs, so as to ensure dignified approaches to London. No important site should be allowed to be occupied by some hideous small building which will spoil the

* A report of this Paper and the subsequent discussion appeared in *The Architect*, May 31 and June 7.

aspect for ever. It had been suggested that no plans of commercial buildings should be passed unless they made provision for the unloading to be clear of the street. Provision for such loading and unloading might be insisted on, with great subsequent advantage.

Mr. Paul Waterhouse, M.A., F.R.I.B.A., said he fancied that all who were gathered there that night were practically so united that difference of opinion would be more or less impossible. They were met to discuss the masterly paper delivered at their previous meeting by Mr. Raffles Davison, and he should like to thank Mr. Davison for having put before the public the aims and the scope of the London Society in such a way as was calculated to lure their attention. Nothing could be done without an absolutely solid basis of fact, especially with regard to those difficulties which are the driving forces for the improvements to which the members looked forward. An immense amount of work had been done in a most tremendously conscientious way in the preparation of the Traffic Reports by the Board of Trade. Colonel Hellard had deprecated certain kinds of improvement schemes. One of the cheapest of the smaller pleasures of life was to make imaginary displays of ingenuity when sitting comfortably in a chair with a pipe, a pair of dividers, and a map. Personally, though something of a sinner on that score, he quite realised that it was a very futile sport unless such schemes are followed up by hard walking and hard riding over the ground. All those studies should be based on practice. In architecture, which he took to be the greatest of all arts, they had an extraordinary conviction that beauty and utility could go hand in hand. He believed that the problem before them was the same as architecture on a small scale, and that it was the duty of the London Society to see that the whole of the solutions put before them should be wrought out as works of art. If the art did not exist now there was no reason why it should not exist in the future. The maps from the Traffic Board's reports which had been shown by Colonel Hellard revealed in a most extraordinary way where the shoe pinched. If the shoe did not pinch, those of them who loved London would say "For Heaven's sake leave her alone." But they knew that they could not leave her alone for she was in agony, and something must be done. It was fitting that the birth of the London Society should coincide with the moment of extreme agony. He would like to plead very urgently for the use of by-passes in the villages on the outskirts of London to which allusion had been made. In Edgware they had an instance of what a terrible thing it was to mutilate a village street. Use and beauty would both be served by employing the by-pass system. A good street might in that way be formed parallel with the principal street. Such a course would save it. The Euston Road was about to become a most successful instance of what could be done. It was the last chapter of a very sad history. The Act of Parliament was intended to preserve a comfortable width; but the Act was powerless against the local authorities. The London Society would help in the future to stiffen public opinion and prevent a recurrence of calamities of that sort. In February of last year he had read a paper on London Improvements before the Royal Institute of British Architects. It had then occurred to him that being really an artistic problem, in the large sense, it was one in which the work of art at which they aimed must be in the long run carried out by artists. If the public sought for artists, some of them must be architects. His own suggestions were that there would be no difficulty as regards the actual house-building in exercising a censorship over designs, just as now the district surveyor does over the observance of the Building Act, and the borough surveyors do over the sanitary matters. The authorities should engage someone to see that the plans are at least up to a certain standard. It seemed to him that there would come a point where an artist or artists must be engaged.

Mr. Arthur Crow, F.R.I.B.A. (District Surveyor of Whitechapel), said that the roads recommended by Colonel Hellard were all excellent for taking people into and out of London, and that was, of course, absolutely essential. He hoped that something would be done to put the tramways on a better footing. At present something like £100,000 was contributed by the trams towards the improvement of the roads. But the tramways did no harm to the roadway, while the motor buses who contributed nothing, did. What he complained of was that the main question of the traffic problem in the centre of London was left untouched. There could be no doubt that the volume of traffic through central London would be increased very largely after the construction of the proposed docks. That problem called for immediate attention, and the roads should be dealt with in order

to give increased facilities. Mr. Crow then placed on the screen views of possible improvements and illustrations of defects in the existing law which permitted buildings to be re-erected to excessive heights on narrow streets, and the perpetuation of extremely awkward projections.

Mr. H. H. Gordon, L.C.C., said that the Road Board could only make a grant of one and a half millions towards the cost of the improvement. That amount had to be allocated among any number of local authorities. The question which first arises before each local authority concerned is "How much are we likely to get out of it?" The London County Council argue that it should be allocated in proportion to the cost which the scheme entails in each locality; some local authorities answer, "No, we want it in proportion to the population"; while others wish it to be divided in proportion to the rateable value. Every scheme is therefore at once divided by the different opinions held. All the efforts of the Road Board seemed to be concentrated on the provision of exits out of London. But it appeared to him that the improvements needed in the centre of London were far more important than those on the outside. Those who had to execute improvement schemes had to reckon the cost. The party now in power in the London County Council hold that improvements must on no account exceed a 5d. rate, no matter how urgent they may be. He believed that the amount which was lost by the non-improvement of London far exceeded the amount paid in actual rates. He calculated, for instance, that the speed of motor-buses in the central area surrounding the Bank was something like three miles an hour. If by means of widening they could attain a moderate result of six miles an hour the London General Omnibus Company alone would save £50,000 a year. The latter figure was apart from the saving of time by the passengers. Merchants complained of the cost of getting goods through London. If one aggregated all these and other items, one would arrive at an enormous total, far exceeding a 5d. rate. The preliminary step towards putting an end to this seemed to him to be an administrative one. They would never have an improved London as long as they had a London that was not unified. There are at present too many conflicting authorities. It was essential that the control, maintenance, and provision of highways should be under one central body. That conclusion had also been arrived at by persons like Sir John Wolfe Barry, who had studied the question purely scientifically.

Mr. Raymond Unwin, F.R.I.B.A., remarked that they might remember the experience of another great capital, and the steps its inhabitants had taken to meet their difficulties. Berlin used to have a frightful congestion of traffic in the centre, and likewise a multitude of local authorities carrying out town-planning schemes. Things were getting so hopelessly muddled that they held a competition which proved that nothing but a central authority would do. Now whenever a local authority forms a town-planning scheme it must embody the main lines of the central scheme. In London also they must constitute a central authority. But the present Government declare that they are not prepared to have any body created like the Water Board. What the Society should do would be to go to the Government and ask what they were going to do in the matter—pointing out that some central authority was essential. A question which had to be considered was whether in a city like London it was the best policy to unite its railway stations or to scatter them. In Berlin the general scheme seemed to be to save the road traffic from station to station. In London they had got to test whether it was the right thing to take Charing Cross station across the river, or to link it up with St. Pancras, Euston, and the other stations north of the Thames. These, and similar problems could only be adequately investigated by a central authority. He would suggest that the London Society should concentrate all its efforts to inducing the Government to create such a body as being the first step towards the improvement of London.

Professor Beresford Pite, F.R.I.B.A., in putting the vote of thanks, said he would like to give what weight he could to the remarks made by Mr. Unwin. They realised what the Government had done in forming the Traffic Department of the Board of Trade. Colonel Hellard had put a magnificent scheme before them. The point he wanted to emphasise was that no power existed for giving effect to these schemes which the Government have prepared for the public information. There was a serious need for legislation for London at the present moment, not only for the creation of the roads described by Colonel Hellard, but for the harmonising of the different interests which circle round the great Metropolis, and which concentrate themselves on this great

question of road-making. They were gathered together to discuss the London of the future—not merely a more useful London, but a more orderly London.

Colonel Hellard, in acknowledging the vote of thanks, said that the expense of dealing with roads in the centre of London was regarded as so prohibitive that he had concentrated his remarks on the outskirts. For a given sum of money, one got ten times the result on the margin of London that one would in the inside. Probably twenty times would be a correcter estimate. If the present town-planning schemes were not availed of, the citizens would never get another opportunity.

THE PAINT AND VARNISH SOCIETY.

(Continued from last week.)

THE testimony of officials in the Admiralty supported the other witnesses to the durability of leadless glazes, but both the Admiralty and Prisons Department had found such ware 10 per cent. dearer. The War Office Report was not exactly favourable to it. The evidence of the Post and Telegraphs Department "considered the products were quite equal to those glazed with lead, and not more costly"; and the salt glazed brown insulators were more efficient than white ones, which contained lead; though subsequent statements were in favour of using leadless glaze insulators for short rather than long-distance lines. But an expert electrician favours porcelain insulators for high-tension currents, inserted in switchboards of generating and distributing stations, coated with leadless glaze, as answering quite the same purpose.

The conclusion to which we are driven is, manifestly, that a longer trial should be given to leadless glaze.

If it is not yet proven that lead can be eliminated entirely from the potting industries, it is evident that its use should be greatly diminished in many instances, and abolished in others.

And the same may with equal justice be said for the paint-making and painting trades.

These conclusions are substantially in accord with the recommendations of the International Association for Labour Legislation, as adopted by delegates at their meeting, held in Lugano in September, 1910.

That conference recommended the enforcement of special rules for the whole of the potting trades throughout; and as regards Great Britain, the Factory Department Draft Regulations (a copy of which has been furnished to me, for consideration, in view of my writing this paper) comprises such a voluminous document as to provide ample occupation for at least one very competent person in a factory without intermission.

If the paint and painting industry is to be favoured with a pamphlet of no less than 23 pages, consisting of regulations, the observance of which is compulsory, I venture to express an opinion that zinc paints will forthwith be held up to unqualified admiration by some of the very same persons who consider to-day that lead paints are absolutely indispensable.

The National Federation of Building Trades Employers of Great Britain and Ireland are a body of Centres and County Federations. The Midland Centre publish a Year-Book at their office in New Street, Birmingham. Representatives meet on an Executive Council from Birmingham and towns in the surrounding district as far distant as Derby, Leicester, Newark, Nottingham, Worcester, &c., some twenty cities and towns. This Executive Council recently memorialised H.M. Home Office—the Factory Department—that they, the Council of the Midland Counties Master Builders, would recommend and prefer the prohibition of the use of lead compounds in paint rather than restrictions and regulations for the painting industry.

Nevertheless, unless prohibited altogether, the use of white lead and red lead in paint and plumbing, gas and water fitting, must indeed be restricted and regulated by law.

The Organs of the Body Affected by Lead Poisoning.

Lead poisoning of the most serious nature is produced by the repeated absorption into the human body of minute quantities over a lengthened period.

It is a question of elimination failing to keep pace with absorption. Poor food and poverty are predisponents. Females are far more liable to it than men, and this is true of the lower animals. Abstinence from tobacco and alcohol have been proved to lessen the danger of lead poisoning, as also does personal cleanliness. The length of exposure to lead, required to produce the symptoms, has been

known to vary greatly; females have died in England after three months, negroes in America in less time.

Mention should be made of Mr. Kenneth Goadby's experiments with gastric juice, reported in the *Journal of Hygiene*, April, 1909, with the object of determining the degree of danger—namely, by the solubility of the lead compounds in the secretions of the body.

These experiments do not show that lead sulphate is less soluble, but no doubt it does not evolve nearly the amount of toxic fumes when applied in fresh paint.

Channels of Entrance into the Body.

Lead enters by the skin, the lungs, and the alimentary canal. As poisoning takes place through drinking water or beer that has stood in lead pipes or by lead dust dissolved in saliva and swallowed, a series of digestive experiments were made by Professor Bedson and Dr. Best at Armstrong College, Newcastle, for Sir Thomas Oliver.

It appeared from these tests that in the absence of food, lead carbonate soon becomes chloride in the human digest, which is soluble and diffusible. But if food is present the hydro-chloride acid is used up in the conversion of the proteid into acid albumen and peptone, leaving (therefore) the lead unacted upon, which has therefore nothing to prevent its passage from the stomach, along with the chyme, into the intestine, and so it gets eliminated. Recommendations were based on these experiments, that all who use lead should take food before commencing the day's work.

The Danger of Metallic Lead.

In addition to the danger of salts of lead, the presence of the metal itself, such as shots or bullets in the body, has resulted in lead poisoning years after the date of the injury.

The Symptoms and Pathology of Plumbism.

Of these, pallor, sallowness, distaste for food, sickness, constipation, lassitude, restless colic, the Burtonian blue line on the gums, with ulceration, loss of teeth, and in women intense uterine and pelvic pain.

Chronic cases develop persistent severe headache and listlessness.

Pallor in lead workers is accompanied by deficiency in red corpuscles of the blood. Instead of there being five millions per cubic millimetre, there may be but half that number, and Continental observers attach great importance to this proof of plumbism; but one of our greatest British specialists thinks it doubtful evidence, and difficult to detect with certainty. It may occur in other conditions; therefore the surer proof would be the presence of lead in the urine and fæces.

Effect of Lead upon Motherhood.

In 1898 in North Staffordshire, whilst 4.9 per cent. of men employed in lead or dangerous processes suffered from plumbism no less than 12.4 per cent. of women thus employed became ill therefrom.

Twenty-three persons died in a few years in Newcastle-on-Tyne from lead poisoning—22 were women.

Twelve persons died in the Potteries from this cause, of whom 11 were women.

It is almost impossible for a woman who is working in lead to be the mother of a healthy child. If a child is born when it should be, it is badly nourished, and soon dies in convulsions.

But, some time after ceasing lead work, such women have been known to have given birth to healthy living children.

"Lead acts prejudicially upon the offspring, both through the mother and the father, but its harmful influence is, as might be expected, greater through the mother. When both parents have been lead-workers, the power for harm is then greatest."

The more, by his occupation, a man is exposed to lead, the more harmful are the effects upon his progeny.

Amongst those who furnish the largest number of reproductive failures are painters and plumbers, printers, and, formerly, pottery dippers.

Of the children of paint grinders, an eminent medical authority found that 40 per cent. die of convulsions during the first year of life.

Professor Lewin, a French medical man, showed in a tabulated record that seven women married to men working in lead bore only two living children; but that had their husbands not worked in lead, the number of children born to them would in all human probability have been 32.

I again draw attention to Sir T. Oliver's recent address on "Lead Poisoning and the Race," printed in the *British Medical Journal*, No. 2,628.

Dr. Prendergast, of Hanley, also testifies that the children born to lead-poisoned parents, who survive infancy, are of

inferior physique, are handicapped in their start in life, and subsequently exhibit symptoms of mental and physical deterioration, or both.

Pathology.

Long exposure to lead injuriously affects the organs of elimination, and there is excess of albumen in the urine. After a time the lead poison gets stored in the system, and then favours the retention within the body of poisons generated by the individual himself.

Sometimes lead is found in the brain and cerebellum. In females there may be hysteria, though not a frequent symptom of lead poisoning, yet often a precursor of speedy death.

Loss of vision and hearing follows on severe headaches or convulsions, either lifelong or only temporarily.

Amongst 130 persons exposed to lead, and whose eyesight had become injured, 34 were painters and 20 were white-lead workers, according to Professor Lewin. In the Newcastle Infirmary 114 persons were affected; 40 did recover their sight, 22 partially, 36 became blind, and 16 died prematurely.

Claims under the Workmen's Compensation Act are liable to become lengthened, because lead is retained within the body for abnormally long periods of time. Even after ceasing to work in lead for sixteen months abdominal pains and sickness recurs, and lead has been found in evacuations.

Sometimes elimination of lead may cease for many years. A patient suffered from colic, mania, and blindness, but recovered. Subsequently she bore six children, of whom five survived, and she was several times laid aside ill.

Seventeen years after leaving the lead work, an attack of saturnine poisoning recurred, proved by the presence of lead in the urine.

Some chemical change in her system had dissolved the lead that had lain dormant or inert, and this, entering the circulation, produced fresh symptoms of lead poisoning.

A labourer, aged 41, had suffered from paralysis, wrist-drop, &c., eighteen years previously. Some potassium iodide was given him, and this was followed by considerable elimination of lead in the urine and recurrence of other symptoms of lead poisoning.

Wrist-drop was traced to plumbism many years ago by French physicians. It is accompanied by wasting of muscles. Sometimes death occurs by paralysis of the respiratory muscular system.

The left-hand muscles being subject to most fatigue in file cutters, consequent on tight grip of the chisel, they suffer more in that hand and wrist. Dr. Ludwig Teleky, of Vienna, has written an account of his studying this question after closely watching forty cases of lead paralysis.

Many instances of ankle-drop have also occurred in persons who used lead.

Plumbism and Gout.

Sir Alfred Garrod found that 33 per cent. of his gouty patients were lead poisoned.

Sir Dyce Duckworth certified that 18 per cent. out of his 136 patients in gout had been more or less affected by lead intoxication. But even though there be no constant relationship between the two maladies, yet, probably, the elimination of uric acid and lead is inversely related the one to the other.

In health, 6 to 7 grains of uric acid are thrown off daily by the kidneys; in lead patients the amounts eliminated varied from 12 to 21 grains, without any signs or symptoms of gout. But this was on Tyneside where gout is infrequent.

Death Caused by Lead Poisoning.

Absolute evidence is obtainable by finding lead in the internal organs.

A woman had worked in lead two and a half years. The distribution of lead in the internal organs of this person, and of two others, was tabulated by Professor Bedson and printed in the "Dictionary of Applied Chemistry" (Thorpe's), Vol. II., page 445. Expressed as metallic lead in parts per million, as much as 24 parts were found in the intestines, 15.5 in the kidney, 14.7 in spleen, 47.7 in liver, and nearly 150 parts per million in the brain, cerebellum, and pons.

Sir William Gowers mentions five grains of lead as being found in a human brain.

It is in the marrow of bones that red-blood cells are formed. German observers have found lead in both the bones and the marrow.

Dr. Hume, of Newcastle, attended a plumber, aged 35, in the Royal Victoria Infirmary. This patient became unconscious and died. The general appearances were those of a healthy person. It would not have been possible to diagnose

the cause of death, had not the pathologist examined and found lead in the internal organs, viz., brain, bladder, kidney, and spleen.

Effect of Occupation on the Form which Lead Poisoning Assumes.

This depends on whether the occupation be indoor or outdoor work. Also, inhalation of fumes or of dust of lead. Inhalation of dust or fumes of salts of lead—that is, oxide, carbonate, sulphide, sulphate, &c.

Apparently, working with metallic lead produces severe paralysis; whereas working with salts of lead involves colic or brain disease of great severity. Women are twice as susceptible to lead mania as men.

When is a Workman Really Suffering from Plumbism?

A greenish-blue line on the gums is also observed in copper workers, so it is not an infallible sign. Nor is the deterioration of the red blood corpuscles.

But the presence of lead in the urine is good evidence. Professor Bedson analysed the urine passed by 23 male lead workers—in the morning—before commencing work; also of three paint grinders in another factory. The lead found varied from 0.40 to 2.40 per million parts. In one man, who had worked in lead (both red and white lead) 33 years, was found the most, there being 2.75 parts per million in his case.

These traces of lead are found long after the patient has retired from lead working, especially after the administration of iodide of potassium. But none of the 23 men, the analysis of whose urine was recorded, complained of ill-health. But had one of them been suffering from colic or weakness of the muscles, and exhibited a blue line on his gums, then the detection of lead in the urine would have been almost conclusive evidence of plumbism. The malady may be latent, but awaiting the fall of a spark to light up an explosion, for lead in the bladder means lead in the other organs of the body.

None of the 23 lead workers above referred to may die of lead poisoning, but all of them would have their recovery from any incidental illness retarded by the lead in their system. There are, therefore, two forms of lead poisoning, actual and potential. There is actual plumbism (with its symptoms), and potential plumbism, awaiting an alteration of the internal chemistry before symptoms can be lit up.

Is the potential form of plumbism to be regarded as a disease under the Workmen's Compensation Act? It may never become actual. Yet, all the same, pathological changes are silently taking place within the body; the consequences of which may be even more disastrous, ultimately, than were the malady to have revealed itself earlier, by symptoms, and have been treated.

Of course there may be other metals present in the urine, and when a claim for compensation is advanced, these should be looked for, before the pathologist can say definitely that lead is the only cause of the trouble.

Lead poisoning in relation to the British Workmen's Compensation Act of 1906 is a subject too varied in its scope to deal with in this paper.

The treatment of lead poisoning, both preventive and curative, is also not within the scope of anyone except a qualified medical man; unless, perhaps, to refer to the importance of cleanliness, and loyal adherence to the observance of regulations drawn up by H.M. Medical Inspectors—such as the use of soap, respirators, and exhaust ventilation in factories.

But I do consider that medical examination is most desirable in the paint and painting trades.

In Milan, a clinical institute has been opened for the study of industrial diseases. And a Museum of Social Service has been founded in Budapest, where old and dangerous processes can be contrasted with modern and healthier ones, and lectures delivered, upon occupation diseases, to the industrial classes.

A similar museum exists in Amsterdam.

Dr. Kaup says that in 1908 Prussian workpeople spent 21,000 days in hospital, and during five years no less than 122,000 days. But at least three and a half times as many persons suffer from plumbism at home who do not enter hospitals; so that in Prussia alone, in five years, the time spent in hospitals by workpeople suffering from lead poison, amounted to about 1,170 years.

What appalling mortality and suffering and injury to the nation, and its advancement, must this pernicious racial poison be causing.

Our Government might easily buy up and put an end to the whole production, and forbid the importation of red

and white lead, rather than suffer this state of things to continue.

It is vested interests that block the reformers' pathway; in fact, self in one or another shape and form. Let us seek to live a little more for others.

(To be continued.)

COUNTRY HOUSE ALTERATIONS WITHOUT AN ARCHITECT.

MR. H. W. VEREY, High Court Official Referee, concluded on July 2 a hearing lasting twelve days of an action brought by Messrs. John Thompson & Co., builders and contractors, of Wood Street, Peterborough, against Mr. George Thompson, of Sutton Marsh, Long Sutton, for the recovery of the balance of an account for alterations and additions to Wryde House, Thorney, Peterborough. The parties were not related. This house, standing on the borders of Lincolnshire, was acquired by the defendant as a residence for his daughter, who in the spring of 1911 was married to Mr. H. S. Dixon-Spain, land agent to the Earl of Leicester. Built in 1862, the place had been a farmhouse. Mr. Compston, counsel for the plaintiffs, stated that no architect had been employed on the job from beginning to end and, save for a rough plan, no plans were ever prepared but by the plaintiffs, who, therefore, had had to be their own architects as well as contractors. The work, according to counsel and the witnesses he called for the plaintiffs, was of such a character that no complete specification could ever be made.

Mr. Herbert Smith, counsel for the defendant, called evidence to allege that the charges were unreasonable and excessive. Mr. Compston suggested in cross-examination to defendant's witnesses that these prices were reasonable in that the defendant would have had to pay them if an architect had been employed in connection with what counsel described as the conversion of an ugly building into a pretty villa.

Witnesses on behalf of the defendant's case included Mr. John Edwin Dixon-Spain, architect, brother of the defendant's son-in-law, and practising at 19 Hanover Square. He stated that when he was first consulted in this dispute he was anxious that the affair should be settled with as little friction as possible between the parties; but the plaintiffs, when he communicated with them, said they could not give any further information than was contained in their account, but they offered him access to their books. There were two methods of arriving at a fair conclusion as to a fit charge for the work. The first was to make a personal inspection of the premises and to form a mental estimate of what one considered a fair amount to charge for the work. The other method was to send a quantity surveyor to measure up and price the work. Anxious that the matter should be settled, the witness took the first course and visited Wryde. The work was fully described to him by his brother, who knew all about it, and the witness came to the conclusion that £1,200 would be ample remuneration for the work done. His pronouncement, however, not having been accepted by plaintiffs, witness sent a quantity surveyor, a Mr. Venning, to measure and price the work. Mr. Dixon-Spain added that he had considerable experience of the alteration of old houses, and he was of opinion that the work at Wryde did not offer any unusual difficulties.

In answer to other questions the witness said it was not usual for architects to take measurements. They only made notes upon which to form judgments. If measurements were necessary, they sent for quantity surveyors.

Mr. Dixon-Spain, in cross-examination by Mr. Compston, stated that he had been in practice for himself for about ten years. His brother had given him all the information he required in order to enable him to estimate the value of the work.

Was it not necessary for somebody to give you information about the hidden work?—Not at all. I had all the information I needed, and even if I had had no information at all, it would not have been difficult for me to arrive, as an architect, at a fairly accurate estimate of what the work was. Continuing, he said that he had taken into consideration everything which had been brought to his notice or which he had noticed himself. He had not borne in mind the alleged rebuilding of a gable end, because, to be frank, he did not think it had been rebuilt. If witnesses for the plaintiffs, however, stated that it was rebuilt he would accept the statement, as it was comparatively a trivial matter.

Mr. Harry Selwyn Dixon-Spain, son-in-law of the defendant, also gave evidence. In cross-examination by Mr. Compston, the witness said he supposed he had intended the plaintiffs to be architects as well as builders so far as architectural work was necessary. He acknowledged that he had intimated that as the old tenant of the house was still in occupation, there could be no specifications, and, therefore, no contract.

Mr. Compston: Therefore you knew that you would have to pay for labour and materials?—Yes, I suppose so, in reason.

Asked if, as there was no architect employed, he did not expect to have to pay for architectural work and advice, the witness replied in the negative. He had expected that it would be taken into account in the ordinary allowance for profit.

Sir A. Brumwell Thomas, F.R.I.B.A., carrying on business at 37 Old Queen Street, Westminster, stated that he had visited this house, for the purpose of giving evidence, in company with Mr. Venning, a surveyor, with whom he went through the bill of quantities. If anything, witness should say that the price of the work assessed by Mr. Venning on behalf of the defendant was a high one.

Asked to point out what the difference would be like between a contract job and a day-by-day job, Sir Brumwell replied that as regarded materials there should be no difference. Regarding the labour element, he said that if each workman wasted an hour and did not exert himself each day, the cost of labour would be affected 10 per cent. roughly. It would affect the whole job by 5 per cent.

Mr. Herbert Smith: What do you say with regard to the necessity of a foreman on the job?—Quite necessary. There ought to be a general foreman who should give his whole time.

Mr. Smith: Plaintiffs' witnesses have said that if this had been a contract job they agree there ought to have been a foreman, but as this was a day-by-day job there was no necessity for one. What do you say?—That has nothing whatever to do with it. A foreman is as necessary in a day-by-day job, in fairness to the employer and the employed. Answering other questions, the witness said he did not see why this work could not have been done in five weeks. Control and organisation, in his opinion, would be the secret of getting this work performed with due expedition. He rejected the proposition that to do this job in five weeks would be a tremendous hurry and drive. In his opinion, Mr. Venning had been quite able to measure and value the work, having regard to a plan he had had, showing what was intended to be done in the case.

In answer to Mr. Compston, Sir Brumwell said that extra works ordered by the clients, including a marble staircase, were responsible for the difference between the final and contract price in respect to Belfast City Hall, for the designing of which the witness was responsible.

Answering another question by Mr. Compston, Sir Brumwell Thomas said that he had not, previous to this case, been called into a case in which he had not been concerned as architect, and there had been no architect.

Mr. Compston: I understand you to say that when once you have settled your measurements your prices would not vary more than 10 per cent. between the two independent surveyors?—That would be a reasonable presumption.

Witness, in re-examination, stated that the majority of the drawings in this case were setting-out drawings which would be included in the ordinary work.

Mr. Smith: Would plaintiffs be entitled to charge extra for them?—I think not. Answering counsel, Sir Brumwell humorously remarked that he had learnt a good deal about construction in this case.

Addressing the Official Referee at the close of the evidence, Mr. Herbert Smith said that his client, Mr. Thompson, had tried to find out what work had been done by the plaintiffs and what he ought to pay them. He had called in the very best expert evidence he could get in London, and professional gentlemen had gone down, at frightful expense to him, to the house. Having investigated everything, they had advised him that a sum of £1,230 was an outside figure and would not suggest that he should pay a penny more. Defendant had, however, for the sake of peace offered £1,400 to the plaintiffs to get rid of this costly litigation. Plaintiffs, however, would have their "last ounce of flesh" out of this unfortunate man.

Mr. Compston, replying on behalf of the plaintiffs, said that his clients were a firm of very high repute and he resented the assertion that his clients sought to extract the

"last ounce of flesh." He also protested against other attacks which had been made against his clients and some of their witnesses. The plaintiffs identified themselves with their men, who had been with them for many years and in whom they had the utmost confidence, and they did not and would not believe that these men, whom they trusted, had been putting down time that had not been worked. The defendant had not desired to have an architect or a clerk of the works; yet the plaintiffs had been attacked unmercifully. It was hard on them that they should be compelled to undertake the duties of an architect in this case and, if the defendant could have his way, without remuneration, and then to have their designs and construction attacked. Counsel reminded the Official Referee that his clients had been entrusted with cathedral restoration work of the highest class. Counsel submitted that the calculations of the time occupied were more or less guesswork on the part of the defendant's representatives, and based on estimates that had not been verified and which might either be accurate or very inaccurate. Counsel submitted that in the circumstances of this case the prime cost basis was the only possible basis. He invited the Official Referee to say that, having heard the witnesses, he was satisfied that the times charged for and worked were accurate, and that plaintiffs were entitled to the full amount of their claim—£1,741.

The Official Referee, in giving judgment, said there was nothing in the whole case to lead him to think that the plaintiffs had the slightest intention to overcharge or to deceive. They were a firm of very high repute, and it was admitted that this work was a good class of work. Witnesses on behalf of the defendant, however, had testified that they had measured and valued the work, and he did not see how he could disregard their evidence, unless he thought they had said what was not true, which he could not think. He found as a fact that the £1,400 paid into Court by the defendant was sufficient to satisfy plaintiffs' claim, and he must, therefore, give judgment for the defendant with costs, after deducting therefrom plaintiffs' costs up to the time of the payment into Court.

ART A LA CONNARD AT THE LEICESTER GALLERIES.

In entering upon a criticism of the works of Mr. Philip Connard, it may be permissible to refer to the somewhat inflated prefatory notes, accompanying the catalogue of the Exhibition. Mr. Oliver Onions has obviously a right to his opinions; but is he well-advised to have such very antediluvian opinions on the subject of the "fundamentals"? We read that Mr. Connard's "greatest strength is his single reliance on the first function of the eye, which is seeing what is placed before it," and we are further told that "this strength is so great, that he can afford to dispense with well nigh everything else."

Truly Mr. Connard dispenses with well nigh everything else, and (to our mind) also with "seeing what is placed before" the eye. Consider No. 17, "Morning"; are we really to believe that either of these females is "what is placed before" Mr. Connard's eye? If so, let us pity the eye so afflicted and also pity the artist who cannot find more attractive models, a criticism that applies throughout, by-the-bye. It is not with genre work as with portraiture, for whereas the latter should give faithful presentments, in genre works the artist should idealise an indifferent model, except where idealisation would destroy the character of the story.

We observe that elsewhere Mr. Onions remarks that Mr. Connard's "processes are uppermost and the outward appearance of things must be painfully sought for, if not missed altogether." And, ah! how painfully we sought; and, ah! how we missed! Further, we are told that "the Exhibition must speak for itself"; speak? why, it shouts for itself; look at "The Supper," "The Marionettes," and others!

The conclusion of Mr. Onions' whole matter is that "Mr. Connard is no *Futuriste*. Above everything else he is an *Aujourdhuiste*." Let us thank Heaven fasting, that he is an *Aujourdhuiste*, if by this we may gather that such Art will survive to-day.

But be it understood that whilst thus we are in all honesty obliged to animadvert so strongly upon this *Aujourdhuiste*, there is good work in the Exhibition, and there are also good ideas in evidence. For our artist can paint sunny effects and breadth of foliage, and he can and does paint flowers with a breadth and a vitality that leave nothing to

be desired. See, in support of this, "Flowers of Spring," "Flower Group," "Still Life" (18), "Still Life" (13), and "Flowers and Fruit," but the fruit in the last two is not satisfactory.

So, too, can Mr. Connard paint textile fabrics well, as in "The Lilac Gown," "The Toilet," and "Morning."

In "A Backwater" we are confronted by the best landscape on exhibition; this is one of the few really passable pictures; there is composition, good massing, good object-reflections and living interest.

But what shall we say of such works as "Femme nue" and "The Model," except that the latter is posed well and its general colour-scheme is pleasing; but the drawing, the light and shade, the modelling of these and other works not mentioned! Ah, let us pass beyond the veil outwards, once more to refresh our eyes with the animated and artistic work of Lady Butler, not yet removed from the Leicester Galleries.

HISTORICAL BUILDINGS IN WESTMORLAND.

THE members of the Westmorland County Council have received a report prepared by Mr. J. F. Curwen, F.S.A., on behalf of himself and Mr. W. G. Collingwood, F.S.A., and Professor Haverfield, F.S.A., on the ancient buildings, earth-works, and other monuments of antiquity in the county. The writers point out that the schedule is quite tentative, but a thorough archaeological survey is in progress. The Committee continue:—

"We would ask you not to deem any item as unworthy of protection because it is little known or scarcely visible to the eye. Forming as they do landmarks of topography and history, each one contributes to our knowledge of Westmorland, and, however doubtful some may be, until further explored, they are all the more worthy of care because they have not yet told their story. We have desired to schedule mediæval grave slabs and also sculptured fragments at present sheltered in the churches. At first sight this may appear unnecessary, but sculptured stones are protected in the Scottish churches, and without this there is nothing to prevent any incumbent from turning such relics out of doors.

"It is also hoped that the schedule will be of considerable use to your Council in the working of the present 'permissive' Acts, by which the county councils have power to become the guardians of any ancient or historic monument that an owner cares to hand over to them, and to spend money on its preservation. So far there is no compulsion, and it is only possible for the Councils energetically to invite the attention of owners to the real scope and intention of the Acts. But there is a bill now before Parliament so to extend them as to make them compulsory, under certain conditions, to secure that historic monuments shall be preserved both from wilful destruction and negligible decay.

"However careful the present owners may be, it does not follow that the monuments will not, at some time, pass into the hands of those who have no interest in them, and the fact is indisputable that each year numbers of earth-works are destroyed, and, by gradual splitting, masonry falls to the ground. For example, the keep of Brough Castle is bound to collapse before long unless attended to, and Arncliffe Tower is in considerable danger."

The following are among the more important parts of the schedule:—

Abbeys, &c.

Shap Abbey.—Premonstratensian, founded by Thomas de Wyrkington, 1191, and dedicated to St. Mary Magdalene; St. Mary's Chapel, Askham Hall, dating from time of Henry IV., now used as a dairy.

Bridges.

Nether Bridge, Kendal, grant of pontage for its repair made in 1376; Devil's Bridge, Kirkby Lonsdale, grant of pontage made in 1275; Levens Bridge.

Castles of the Norman Period.

Appleby, 1174; Brough-under-Stainmore, 1170; Brougham, 1220; Kendal, 1184; Pendragon, 1180.

Crosses and Carved Stone Monuments.

Those of the pre-Norman period—from the eighth to the eleventh century—comprise twenty items, including hog-back built in St. Michael's Church, Appleby; the Round Devil shaft, a shaft at Redman House, and a fragment on Mr. J. Harrison's house, all at Kirkby Stephen. Post-Conquest crosses and monuments include the two market crosses at Appleby, market cross at Ambleside; boundary

cross at Bampton School from Knipe Scar; Norman knights at Bolton Church, the Cauld Stean at Kendal, market cross with foot shackle rings at Milnthorpe, and portions of crosses at Cliburn, Brougham, Kirkby Stephen, Lowther, Milburn, Newbiggin on Eden, Ormside, Warcop, and Ravenstonedale.

Fortresses and Earthworks.

Under this heading there is a very long list of nearly a hundred places. They include Castle Crag, Mardale, Castlesteads on Helm, Kendal; and Croglin Castle, Kirkby Stephen; Castle Hill, Dallam Tower, Castlesteads, Lowther, King Arthur's Round Table and Maybrough, Eamont (both now protected), Loscars and Moorland Head, on Newbiggin Moor; Maiden Hold, Bongate, and Coupland Beck, Warcop.

Holy Wells.

There are ten holy or historic wells in the list, at Asby, Bampton, Brougham, Clifton, Kirkby Stephen, Newbiggin-on-Lune, Patterdale, Smardale, Witherslack, and Casterton.

Pele Towers and Megaliths.

There are fifteen pele towers scheduled, all now uninhabited, including Clifton, Lammerside, and Wharton. Of megaliths there are stone circles on Lowther Scar and Knipe Scar, the remains of the great circles and avenues represented by the Goggleby stone and various thunderstones at Shap, and various kinds of megaliths at Clifton, Crosby Ravensworth, Raisbeck, Cliburn, Eamont, Adlendale, Gunnerkeld, Tebay, and High Street.

Roman Monuments.

This section includes the permanent fort still visible near the Castle at Brougham; the camp at Brough-under-Stainmore; Redlands Camp, Crackenthorpe; the fort at Whelp, Kirkbythore; forts at Low Borrow Bridge, a little to the south of Tebay; Maiden Castle, Stainmore Common; Borrans Ring, Ambleside; and Watercrook, Kendal.

COMPETITION NEWS.

COLWALL.—In a recent limited competition for the sewage disposal of Colwall, near Malvern, the scheme submitted by Messrs. Taylor & Wallin, of Newcastle and Birmingham, has been premiated, and the firm engaged as engineers for the execution of the scheme. The disposal works will be on modern bacterial lines of the most up-to-date description.

DUNFERMLINE.—Fifty-four competitive designs for the proposed Netherdown Institute for the Carnegie Dunfermline Trust were submitted. The trustees have decided to accept that of Mr. James Lindsay, A.R.I.B.A., 248 West George Street, Glasgow, for the erection of the building. Mr. Auldjo Jamieson (of Messrs. Sidney, Mitchell & Wilson, architects, Edinburgh), who acted as assessor, has awarded the premiums offered to the following:—First premium (£20) to Messrs. Williamson & Reid, 6 High Street, Inverkeithing; second premium (£15) to Mr. James D. Cairns, 63 George Street, Edinburgh; third premium (£10) to Messrs. Walgate & Clough, 13 Lamond Road, Chelsea, S.W. It is estimated that £7,300 will be required to complete the building in accordance with the accepted plans.

HULL.—Mr. E. Cooper, F.R.I.B.A., of Gray's Inn Square, London, the assessor of the designs submitted for the "Homes of Rest" to be erected in Pickering Road, has made the following awards:—First, Mr. H. T. Hare, of London; second, Messrs. W. S. Walker & Sons, of Hull. The work is estimated to cost between £25,000 and £30,000.

LONDON.—The committee of the Mural Painting Exhibition at Crosby Hall announce the following further results for the competitions:—Church of St. Jude-on-the-Hill, No. 21, Miss Mabel Esplin; and Sutton Valence School, No. 85, George Haghe Day. The names of the other prize-winners were given in our issue of June 21.

MOTHERWELL.—The Dalziel School Board will proceed with the erection of a high school off Hamilton Road, and have appointed Dr. J. J. Burnet, A.R.S.A., F.R.I.B.A., Glasgow, assessor. Plans are to be invited from local architects and from a few of the best known in Glasgow and Edinburgh. Premiums of £50, £30, and £20 are to be offered.

OLDHAM.—Mrs. Councillor Lees, of Oldham, has offered prizes of £100, £50, and £25 for designs for a housing and town-planning scheme. The Housing and Town-planning Committee have decided to allow until October 31 for plans to be sent in.

SHEFFIELD.—In the competition for the new Dore and Totley Union Church, the assessor, Mr. Norman M. Doncaster, has made the following award:—First, Messrs. Chapman & Jenkinson, Sheffield; second, Messrs. Gibbs, Flockton & Teather, Sheffield. The building is to be proceeded with at once, under the direction of the architects placed first.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

The New R.I.B.A. Council.

SIR.—I am very glad to notice the letter in your last issue of "R.I.B.A." I presume from the letter that the writer is neither a Fellow nor an Associate, but one of those gentlemen who has the proud privilege of placing the word Licentiate before the magic letters. Well, Sir, I am without the fold, but nevertheless I have always taken a certain amount of interest in the doings of our Royal Institute, and have most regretfully noted its shortcomings. Having taken, as I state, an interest in its proceedings, I have, of course, been compelled to be aware of the name of Mr. E. T. Hall, one of the most regular attendants, I believe, at the meetings. I have attended more than one meeting as a guest, and I can remember the feeling that always impressed me, that he was essentially a strong man, a man with convictions which he was not afraid to express, and I most heartily endorse the remarks of "R.I.B.A." that it is a pity that such services should be lost to the Council. I am not complaining of the gentlemen who have secured "the seats of the mighty"; they are, I believe, "good men and true," even if I am not fully in sympathy with their exclusive views.—Yours truly,

OUTSIDE THE CAMP.

SIR.—I was much interested to read in the present issue of your paper a letter signed "R.I.B.A." respecting the new Council. I may say that I have read both bye-laws 27 and 35, and may express my frank disapproval of the method of allowing a 50 per cent. drain off the Council before re-charging the system. The customary and desirable method is by co-option on the part of the remaining Councillors as each vacancy occurs.

Still, Sir, were it not invidious to do so, I could suggest that half of the present Council might well retire, to give Mr. Hall a renewed chance, if he would consent to re-nomination. Need I add, Sir, that from that percentage I omit your name, as I should deeply regret your absence from the Council.—Faithfully yours, Also R.I.B.A.

BOOKS RECEIVED.

"Building Structures in Earthquake Countries." By Ing. Alfredo Montel. Translated from the Italian, with additions by the Author. With forty-two Diagrams in the Text and one Plate.

(London: Charles Griffin & Co., Ltd. 8s. 6d. net.)

"Through Greece and Dalmatia" A Diary of Impressions recorded by Pen and Picture. By Mrs. Russell Barrington.

(London: Adam & Charles Black. 7s. 6d. net.)

"Taxation of Land Values as it affects Landowners and others." By John Orr, M.A.

(London: P. S. King & Sons. 1s. net.)

"The Painters' Pocket-book. A practical reference guide to everyday work." By Arthur Seymour Jennings. With special contributions by Noel Heaton, B.Sc., F.C.S., Paint Technologist, and Charles Harrison. Third edition.

(Manchester and London: John Heywood, Ltd. London: The Trade Papers Publishing Co., Ltd., 3s. net.)

"The Main Drainage of Towns." By F. Noel Taylor, Civil Engineer, M.Inst.Munl.Engneers.

(London: Charles Griffin & Co., Ltd. 12s. 6d. net.)

"The Preparation and Uses of White Zinc Paints." By Paul Fleury. Translated from the French by Donald Grant.

(London: Scott, Greenwood & Son. 6s. net.)

The Architect.

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FORTHCOMING EVENTS.

Friday, July 12.

Institute of Sanitary Engineers : Summer Visit to Birmingham (three days).

Saturday, July 13.

Manchester Society of Architects : Visit to Liverpool : (1) The Cathedral (Mr. G. G. Scott, architect); (2) Midland Adelphi Hotel (Mr. F. Atkinson, architect). Train leaves Central Station at 1.30 P.M.

University of London : Exhibition opens of work done in the Architectural Department (eight days).

Monday, July 15.

Royal Society of Antiquaries of Ireland : Munster Meeting at Waterford and excursions (six days).

Wednesday, July 17.

Northern Architectural Association : Annual Excursion.

THE HISTORY OF ARCHITECTURE IN INDIA.

THE history of architecture in India may be said to commence with the reign of Asoka from about B.C. 265 to 228, at which time Buddhism became a State religion, and appears to have reigned almost supreme in India, although there is no reason for believing that the Vedic religion or Brahmanism then vanished. Mr. Fergusson, in his "History of Indian and Eastern Architecture,"* tells us that "During four or five centuries after the Asoka era we have not a trace of a Hindu building or cave, and, so far as any material evidence goes, it seems that Buddhism at the time was the predominant religion of the land. It is not, of course, to be supposed that the Hindu cult was wholly obliterated, but it was dormant and in abeyance." It is not to be assumed that there was no architecture in India before the days of Asoka, but it was a timber architecture, of which the remains and records have vanished, so that as the earliest political and ethnographic history of India is, for want of records, obscured in a haze of overlaid traditions, so the architectural history commences with the stone buildings first constructed during the Buddhist supremacy.

The various objects of Buddhist art are classed by Mr. Fergusson under five groups—(1) Stambhas or Lāts, pillars common to all the styles of Indian architecture; (2) Stūpas or Topes, dome-like monuments containing relics of Buddha or of some Buddhist saint, or erected to commemorate some event or mark some sacred spot dear to the followers of Buddha; (3) Rails, one of the most important features of Buddhist architecture; (4) Chaityas or Assembly Halls, corresponding very nearly to the churches of the Christian religion; (5) Vihāras or monasteries.

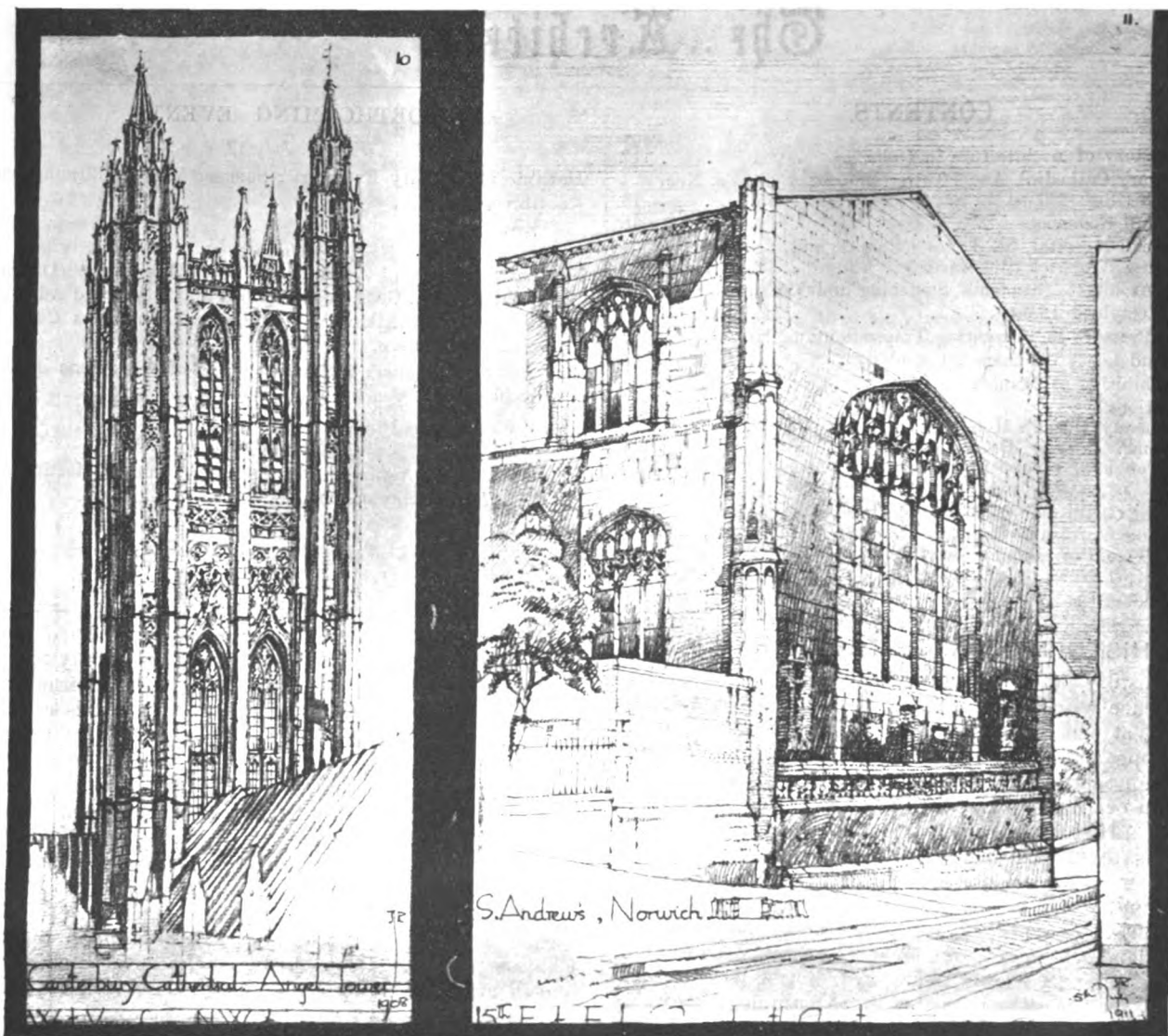
In common with other objects of Buddhist architecture, it is at least probable that the lāts took their form from a wooden original, although there is evidence in the decoration of some of the earlier ones of Assyrian influence. Of Buddhist topes the most extensive group now remaining is at Bhilsa, on the north border of Bhopal, but in all probability there were many other groups of even greater importance, as there are said to have been 84,000 topes erected by Asoka. The rails of Buddhist architecture which, as at Sanchi, were sometimes extended into great gateways, were usually the occasion for much sculpture, sometimes expressive of tree and serpent worship, at

others representing scenes from the career of Buddha or of contemporary life. The chaitya halls are mostly represented by rock-cut buildings, but a few structural examples remain sufficient to prove that what is carved on the rock-fronts of the cave buildings was a replica of the form of those constructed in the open. The chaitya seems to have been usually apsidal ended on plan, frequently with aisles and pillars, and to have been roofed with a circular timber roof or brick vault covered with plaster. The vihāras or monasteries were in Buddhist architecture, like the chaityas, either independent structures or rock-cut dwellings, and the appearance of the former may be gathered from the description of the Chinese traveller Hiuen Tsiang in the seventh century, quoted by Mr. Fergusson. "In the different courts the houses of the monks were each four storeys in height. The pavilions had pillars ornamented with dragons, and had beams resplendent with all the colours of the rainbow—rafters richly carved, columns ornamented with jade, painted red and richly chiselled, and balustrades of carved open work. The lintels of the doors were decorated with elegance, and the roofs covered with glazed tiles of brilliant colours, which multiplied themselves by reflection and varied the effect at every moment in a thousand manners." The rock-cut vihāras seem to have usually consisted in plan of a more or less rectangular pillared hall, surrounded by cells and with a verandah in front. Sometimes there was a distinct shrine or enlarged cell as a sanctuary or chapel.

An interesting section of Mr. Fergusson's history is the section on architecture in the Himalayas, where in the valley of Kashmir exists a complete and homogeneous group of temples extending through about five centuries (A.D. 600 to A.D. 1100), singularly uniform in their development and very local, being unlike any other style known in India, and having besides an impress of Western civilisation in quasi-Grecian forms reminiscent of the Doric, Ionic and Corinthian orders. In Nepal the remains of Buddhist architecture are for the most part more modern than in Kashmir and tinted by Tibetan and Chinese influence.

Hindu architecture Mr. Fergusson divides into three styles—Dravidian in Southern India, Chalukyan in the Central Provinces and Indo-Aryan in the north. An outstanding feature of Hindu architecture is the preponderating use of the horizontal or corbelled arch and of the bracket. One of the consequences of this mode of construction was that all the decoration of the Indian domes was horizontal, or, in other words, the ornaments were arranged in concentric rings, one above the other, instead of being disposed in vertical ribs as in the Roman or Gothic vaults. Another result was the tendency of the

* *History of Indian and Eastern Architecture.* By the late James Fergusson, C.I.E., D.C.L., LL.D., F.R.S., F.R.I.B.A., Member of the Society of Dilettanti, &c., &c. Revised and edited, with additions. "Indian Architecture," by James Burgess, C.I.E., LL.D., F.R.S.E., &c., &c., and "Eastern Architecture," by R. Phené Spiers, F.S.A., F.R.I.B.A., &c., &c. With numerous illustrations. In two volumes. (London: John Murray. 42s. net.)



FROM SKETCHES SUBMITTED BY MR. J. R. LEATHART FOR PUGIN STUDENTSHIP, 1912.

temples or monumental buildings to rise to a considerable height in a succession of storeys or bands gradually diminishing to the crown or apex.

Dravidian architecture is practically that of the Madras Presidency or the country inhabited by people speaking Tamil or cognate tongues, who, thinks Mr. Fergusson, are descendants of aboriginal races of India. Until they came in contact with the Muhammadans all the architectural efforts of the Dravidians were devoted to the service of religion; their civil buildings, therefore, are in a new and different style of architecture from that employed in the temples, and are in what we may call a pointed-arched Moorish style, with the whole of the ornamentation worked out in exquisitely fine stucco.

The Chalukyan style was naturally evolved from the Dravidian, and although most of the earlier and the finer examples of its architecture perished during the early Moslim invasions, is neither the least extensive nor the least beautiful. Elegance of outline and marvellous elaboration of detail, with marked horizontality of receding storeys, are prominent features of Chalukyan temples and shrines.

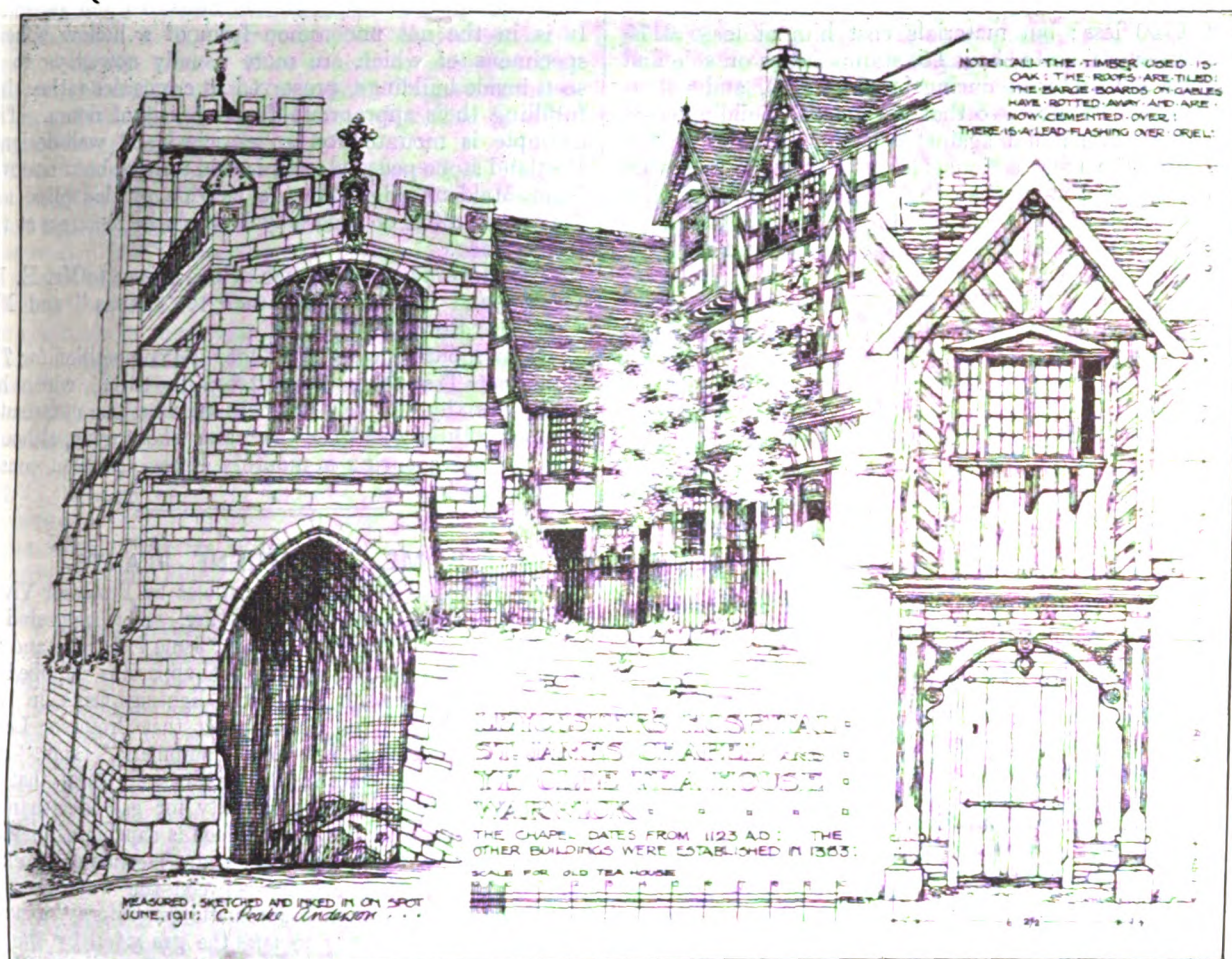
In using the term Indo-Aryan to distinguish the architectural style of the Hindus of Northern India, Mr. Fergusson is careful to explain that he does not thereby imply Aryan characteristics or influence, but as the origin of the Northern Hindu style was to him a mystery, he chose the term as indicative of locality, although wave after wave of incursions of Turanian peoples had during the building ages reduced the people of pure Aryan blood to a very small proportion of the population. The Indo-

Aryan style can be best seen in its purity at Orissa, as far as temple architecture is concerned, but there are a number of extensive and beautiful palaces which, although altered and enlarged at various dates, distinguish in a marked degree the architecture of Northern India from that of the South.

Buddhism and Hinduism do not exhaust the religions of India. We have also that of the Jaina sect, closely resembling the Buddhists, and that of the Muhammadans, both with well-marked architectural characteristics, as to which we must refer our readers to Mr. Fergusson's exhaustive volumes. Enough has been said to show that Indian architecture is an exceedingly complex study; indeed, we find that in Muhammadan or Saracenic architecture alone Mr. Fergusson distinguishes no less than thirteen divisions, each with local peculiarities, and including some of the most noted and beautiful buildings in India. We have also the variants in style to be found in Further India, Burma, Cambodia, Siam and Java, so that it is easy to understand there are many architectures in India, and that a thorough comprehension of the art there manifested is no easy matter.

NOTES AND COMMENTS.

THE School of Civic Design at Liverpool University has justified its existence. The annual prize donated by Sir William Lever produces designs from students that are worthy of execution. Last year's winning scheme for Port Sunlight was admirable; this year's successful design for laying out a portion of land bounded by Brownlow Hill, Mount Pleasant, and Bedford Street is



FROM SKETCH SUBMITTED BY MR. C. PEAKE ANDERSON FOR PUGIN STUDENTSHIP, 1912.

even more so. The conception of admirable schemes is, however, but one part and the easiest of town-planning. The estimation of their cost and the proof of their financial possibility is another question and the more crucial. A town-planner to be worth his salt must be a financier, and genius in finance is even more important than imagination in plan.

London University's new home is still in a distant and dubious future. The principal suggestions that have been made are as follows: (1) A site on the vacant land, belonging to the Duke of Bedford, at the back of the new British Museum extension; (2) the Crystal Palace; (3) the Botanical Gardens of Regent's Park; (4) a corner site near the Gray's Inn Road; (5) the site now occupied by the Foundling Hospital in Bloomsbury; (6) a site adjoining the new London County Hall by the Thames at Westminster. Serious objections exist against all except the first and last on the ground of situation, and the first is now practically out of court for reasons of finance. The last, though to our mind a less attractive locale than the first, has nevertheless many points in its favour from the point of view of London town even more than of London University. The town would be benefited by the improvement of the southern side of the Thames, and the University, if not so readily accessible as in Bloomsbury, would at any rate be in the public eye.

The proposal for a National Provincial Art Gallery to be located in London has scarcely, we think, a logical basis. It infers, what is not the fact, that art produced in the provinces has not an equal chance of being exhibited with that produced in the Metropolis, even when it is of equal calibre. On the contrary, the exhibitions held in London, from the Royal Academy downwards, are national, and much of the best work shown in them comes from the provinces. A National Provincial Art

Gallery would inevitably be the receptacle of work that is not good enough to hold its own in the present exhibitions, and to be included therein would soon be taken as a mark of inferiority. The provincial work that is not good enough for the Royal Academy stands a far better chance of appreciation in a provincial show, where local sentiment would be to its faults a little blind.

Mr. Tarrant, of Byfleet, a speculative builder of good-class houses, has recently expressed his view of the practical working of the land taxes in their effect upon the building industry. He says that the land taxes took from him the opportunity of using thousands of pounds on terms much more favourable than anything he was able to arrange now, because the land taxes have reduced the security of land. It is the loss of this security which has reduced the price of land and buildings erected thereon. The fact that land and buildings have lost some of their security justifies and enables capitalists, &c., to ask a higher rate of interest for their cash than they either asked or were able to get when they held a perfect security. This increased rate of interest not only affects the person who builds houses, but it affects all those allied trades which produce the builders' materials. All those industries either have to have large tracts of land, like brickmakers' works, or large workshops, such as paint or joinery factories. There are very few traders but either have a mortgage on their premises or occasionally deposit their deeds with their bankers, so that almost every trader has to pay higher interest charges now than he had. So it comes about that the blow to security which has cheapened the building land has raised the price of the materials which the builder uses, and has raised the price of the food and clothes necessary to enable the workman to live. He says that he has carefully worked out the figures connected with one of his average houses, value about £3,000, and finds that since

the Budget he can get the land for this sized house at about £150 less; but materials cost him at least £175 more, solicitors' costs about £5, stamp duties on sale and mortgage £22, interest during building £20, and valuations average £4 more, so that his finished building costs £226 more than it did against a saving of £150 on the land. But the most serious factor is that the increased interest does not stop when the building is finished, but goes on, and is likely to get still higher, so that the house is saddled with an increased annual expenditure of something like £15 to £20.

An interesting article appears in *The Connoisseur* this month on Lincoln's Inn and its Treasures, in which the old buildings as well as some of their more curious and valuable contents are described and illustrated, which include works appertaining to architecture and other arts. Other articles in this month's issue deal with the current exhibition of miniatures at Brussels, old Staffordshire pottery figures and old lacquer, with special reference to Chinese work.

The British Fire Prevention Committee announce that to meet suggestions from several foreign Government Departments and other public authorities abroad who are desirous of following the results of the Committee's research work—but frequently have to contend with linguistic difficulties—a supplementary summary in the German language is being added to the Committee's publications. We do not propose to reprint these translations, but are pleased to know that our British work is appreciated to such an extent as to make them desirable. We understand that translations into the French language will shortly follow.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

WE have received but few drawings of sundials, which appears to form a subject that is rather outside the usual range of our students' work, but these adjuncts are often the objective of excellent craftsmanship and design, and besides furnish points of interest in a building or its surroundings. The drawings we have received are, however, though few in number admirable in quality.

"Alpha" has illustrated three examples of sundials, one a detached pedestal dial in the garden of the vicarage at Ryton-on-Tyne, and the others wall-dials at Heriot's Hospital, Edinburgh, and South Church, Bishop Auckland, respectively. The conditions of our competition limit each student to one subject only, and "Alpha" pins his faith to the Heriot's Hospital example for the competition and submits the others *hors concours*. The competitive drawing shows a double dial on two faces inclined at an obtuse angle, an instance of the making of difficulties in which seventeenth and eighteenth century diallers delighted to show their skill. The gnomons are not quite correctly shown in "Alpha's" plan and elevation. It is important in studying dials to get the plan and angle of elevation of the gnomon absolutely correct, as upon these points depend the accuracy of the dial as a time-keeper. The example which "Alpha" illustrates from Bishop Auckland is interesting as bearing a statement on the inscription of "Latitude 54° 49'," the determining factor of the gnomon's angle, any given gnomon being only suitable for a particular latitude. The example from Ryton is a good illustration of the usefulness of a sundial as a motif for a scheme of garden planning.

Mr. Chas. H. Roberts has drawn an interesting dial on three rectangular faces from Wimborne Minster, Dorset, with gnomons on the west and east as well as on the south, another piece of difficulty making. Mr. Roberts has wrongly named his east and west elevations and the lettering of the hour lines on the real west elevation is incorrect. Mr. Roberts' perspective is a good and effective drawing.

Mr. E. H. Gibson has found in a Harrogate curio

shop the sundial which he has measured and sketched. It is in the not uncommon form of a hollow sphere, specimens of which are more usually nowadays to be seen inside buildings, preserved as curiosities rather than fulfilling their appropriate function out of doors. This example is mounted on an enriched and well-designed Portland stone pedestal, and is said to have been removed from Maidenhead. As the latitude of this place and Harrogate differ considerably it would be incorrect at the latter place.

We have awarded a prize of one guinea to Mr. E. H. Gibson and half a guinea each to "Alpha" and Mr. Chas. H. Roberts.

This month's work concludes the competition for *The Architect* Travelling Studentship for 1912, which has been won by Mr. E. H. Gibson, who has contributed regularly throughout the year, and whose work, although not always securing a monthly prize, has been consistently good.

SOME ACETYLENE PLANTS.

FOLLOWING on the series of articles by Professor Vivian B. Lewes on Acetylene Lighting, which appeared in *The Architect* issues of May 31, June 7, 14, 21, and 28, we now give particulars of the apparatus supplied by some of the leading acetylene lighting firms in this country. It will be remembered that Professor Lewes drew a distinction between "automatic" and "non-automatic" generators, the distinction being that the former "have a storage capacity for gas less than the total volume the charge of carbide is capable of yielding, and which will depend upon some mechanical contrivance for stopping contact between the water and the carbide," whilst in non-automatic generators "a holder of sufficient capacity to take the gas given by the full charge of carbide is employed." The distinction in terms is, however, a little likely to confuse, as "non-automatic" generators can be and are, for the purposes of the user, made to work automatically. One may perhaps more clearly understand the essential difference between the two types if we say that the "automatic" generator makes acetylene gas only when there is a demand by the burner, whilst the "non-automatic" makes and stores gas whether there is any immediate consumption or not.

The generator of the Acetylene Corporation, Ltd., is of the "non-automatic" type, but works automatically in that when you have put in the charge of carbide and turned on the water tap the machine does the rest and goes on working till the gas in the whole charge is generated, washed, purified, and stored in the gas-holder and cooled ready for use when required. An important feature in generators, as pointed out by Professor Lewes, is the working pressure; it is stated by the Acetylene Corporation that in their plant there is an internal pressure of five inches water column only, with 2½ inches at the burners. This low pressure makes for purity of the gas produced. The carbide supplied by the Corporation appears to be of high quality capable of a production of 5.38 cubic feet of acetylene per pound, but, as Professor Lewes points out, this is the theoretical maximum for carbide and no generator can be expected to produce without some loss. The Corporation's plant, however, seems to give every promise of a high efficiency.

The plant of the "Bon-Accord" Acetylene Gas Company includes a generator of the "automatic" type, or rather twin generators, which do not work simultaneously, but alternately, by which means some of the defects of the type pointed out by Professor Lewes are obviated. Provision is made for the storage of the gas evolved after the water supply has been shut off, and the generators are surrounded by water jackets having a constant circulation of cool water by connection with the water tank, thereby keeping the temperature as low as possible. By the use of twin generators one can be recharged without interfering with the lights, while the other is supplying gas. The pressure in the apparatus is stated never to

exceed $1\frac{1}{2}$ lb. per square inch, and the yield of acetylene is guaranteed at 90 per cent. of that obtainable from the carbide used. Thus it will be gathered that whilst the advantages of an "automatic" type of generator are maintained, the disadvantages described by Professor Lewes are minimised.

The "Incanto" system of the Thorn and Hoddle Acetylene Company, Ltd., uses a plant with a generator which may be described as a compromise between the "automatic" and "non-automatic" type in that a moving gas-holder is provided, but the flow of water to the carbide is controlled by the demand for gas. Thus provision is made in the apparatus for the storage of gas due to after-generation, and it is stated by Professor Lewes that the "Incanto" generators "work automatically in a perfectly satisfactory manner without any sign of over-heating, whilst the yield of gas is from 95 to 99 per cent. of that possible to be obtained from the carbide used." The objectionable features of "automatic" generators, of which Professor Lewes speaks in his articles, appear therefore to have been overcome in the "Incanto" plant whilst the advantages of the type remain.

It is scarcely necessary to say that in each of the three typical examples of acetylene plant to which we have referred high importance is given to the purification of the gas after generation. Each manufacturing firm has its own favourite special mixture of purifying material. It is fortunate for acetylene that the burning of impure gas is unendurable, as plants must be made to prevent this effect, and so the use of acetylene for lighting results in far less vitiation of the atmosphere than does the burning of coal gas.

THE EFFECT OF WATER PRESSURE IN PREVENTING THE TRANSMISSION OF HEAT FROM STEAM THROUGH SURFACES.*

I HAVE been interested in the question of heat transmission for a great many years, and in making various tests of the apparatus have been somewhat troubled at times to find the cause for variable efficiency, and I came to the conclusion that where head pressure on the water side existed it had to do seriously with the efficiency of the steam pressure on the other side.

In a paper I read before the Manchester Association of Engineers in February 1897, I gave a brief series of tests of the efficiency of steam, varying from 5 to 40 lb. per square inch, which went to show that whilst the thermal unit value of a pound of steam did not vary very much, the efficiency of pressure to transmit itself through surface was a very important point.

It has been the practice in heating water for use in public buildings to use steam of a low pressure, probably through fear of putting too great a tax on the strength of the apparatus employed. This is a false policy, as will be seen by the following table. The heating efficiency of steam goes up in proportion to its pressure, and high-pressure steam means much more compact apparatus.

Table Showing the Efficiency of Heating Surface at various Steam Pressures.

Steam Pressure in lbs. per sq. in.	5	10	15	20	25	30	40
Quantity of water raised from 50° Fah. to 180° Fah. in gallons per square foot of heating surface per hour	35	42	56	62	80	93	103

I recently made a series of tests to substantiate or dismiss this theory, and obtained valuable help from Mr. L. Holm Lewis, M.I.Mech.E., chief engineer of the Manchester Corporation Hydraulic Power Department, inasmuch as he placed at my disposal a test apparatus of very steady hydraulic load on the water side. He also took a keen interest in the matter, and in collaboration we carried out a series of tests, commencing with 100 lb. steam pressure and 100 lb. water pressure, then changing the water pressure every few pounds down to 5 lb. This showed that as the head pressure of the water was taken off the efficiency of the steam in transmitting the heat units considerably increased, showing a very interesting curve.

Another series of tests was made with steam at 50 lb. pressure, starting with 5 lb. water pressure, and going up to 50 lb. This also made a good curve, but in raising the water pressure from 50 lb. to 100 lb. there seemed to be no difference in results. A third series of tests was made with steam at 25 lb. pressure and water from 5 to 25 lb. pressure.

As a result of the tests it is found that the reduction of heat transmission as indicated by a diagram follows a curve until such a point at which the water pressure becomes equal to steam pressure, and after this point any rise in the water pressures does not seem to produce any decrease in the heat transmission. As the decrease in the transmission of heat ceases when the water pressure equals the steam pressure, we may assume that as the point at which the decrease ceases is the point where the possibility ceases of the steam within the tube producing air bubbles on the outside of the tube, that the decrease in efficiency is due to the gradual reduction as the pressure increases on the water side of that proportion of the tube which is capable of producing on its surface on the water side minute air bubbles. This must be taken as a theory capable of clearer light on further investigation.

GREAT AND LITTLE BOOKHAM.*

IN preparing this paper upon Great and Little Bookham I found it was a less easy task than I expected, for every fact had to be dug out, and this entailed a good deal of investigation. The name *Bookham* was spelt in various ways—such as *Bocheham*, *Bokham*, *Bowkham*, and *Bokeham*. The probable derivation of the word is "Boc-land," which is explained as "Book-land," or land held by a charter, from "boc," a book or writing. Next to "ton" the commonest English suffix is "ham," which occurs in the names of insignificant hamlets, and even of isolated farms, denoting the house or "home" of an early settler. This may be the explanation of *Bookham*; that is, a place or enclosure of Chertsey Abbey—and, in the case of Little Bookham, the home of Halsard, who held it of William. This seems to me to meet the case, though I admit it does not appear to be the true meaning of the word. The word "boc," again, also applies to beech trees, but there are very few beech trees in this part. In an old dictionary it was given: "Such land as is held by charter, or instrument in writing, which cannot be conveyed to another either by sale or gift, but must descend to the next heir, an hereditary estate." The entry in Domesday Book is:—"The land of Chertsey Abbey in Fingeham Hundred, Bocheham (Great Bookham). The abbey itself holds Bocheham. In the time of King Edward it was assessed for twenty-six hides and now for thirteen hides. The land is for nineteen ploughs (team ploughs). In demesne there is one plough and thirty-two villeins, and four bordars with eighteen ploughs. There is a church and three serfs, and a mill worth 10s. and six acres of meadow. Wood for eighty hogs. From the herbage thirty hogs. Of this land Gunfrey (Gunfrid) holds one hide, and he has there one plough. The whole manor in the time of King Edward was worth 16 pounds, now 15 pounds." The mill mentioned in the Domesday Book was doubtless the water-mill at Slyfield on the river Mole, which was still in use within living memory.

St. Nicholas, Great Bookham.

I have taken the following description of this church from the paper written by the late H. G. Quartermain (September 30, 1893), having obtained permission from his widow to do so. The earliest mention occurs in Domesday as "the Manor, the Church, the Mill, and Wood, the whole worth in Edward the Confessor's time £16"—about £960 of our money. The oldest part of the church is the south of the nave; this may be even part of the church mentioned as of Edward's time, and, therefore, of Saxon work built under Norman influence. The pillars are massive, with flat cushion caps and plain semicircular arches over, similar to those at Little Bookham and Fetcham near by. These, again, may have been cut through Saxon walls early in the twelfth century. We can find reason for believing that the floor level has at some time been altered. The church measures 110 feet by 60 feet. The western bay of the south aisle, part of the earliest work now standing, is very narrow (5 feet 9 inches), as were nearly all early Norman aisles, with small and narrow Norman windows at end. The tower walls probably belong to the same period. They are massive, and may have been built only to their present height on account of the difficulty of obtaining stone; they are sur-

* Abstract from a Paper by Mr. O. M. Row, President of the Institution of Heating and Ventilating Engineers.

* Read at a meeting of the Upper Norwood Athenæum by Mr. T. C. Thatcher.

mounted with timber framing and spire. The belfry, you will notice, is one peculiarly characteristic of Surrey, and especially of the Surrey Weald.

The church is crowned by a small wooden bell-turret, and surmounted by a shingled spire, apparently perched, as seen from the outside, on the roof ridge of the nave, but really supported by massive timber framing or by tie-beams in the building below; this framing is placed at the west end of the nave. There are so many other instances of this form of construction that the builders appear to have distrusted their walls, and carried the bells on oak framing instead, such as Horley in Surrey, Sutton and Horndon-on-the-Hill, Essex. The pillars on the north side are octagonal and half-octagonal; with this variety of light and shade there is a better appearance. The type of cap to these columns with the arches indicate the change in style in building from Norman to Early English. But the design has been to keep the walls of similar height, and this has shortened the pillars. The chancel was built by the Abbot of Chertsey in A.D. 1341, who had undertaken its repair. This date is indicated by an inscription in Lombardic letters, cut on slab and built into the east wall of the chancel on the inside face of the south-east corner. This inscription has been noticed by Manning and Bray, and Aubrey, and is here given:—

Hec domus Abbate fuerat constructa a Johanne

de Rutherwyka, decus ob Sancti Nicholai

Anno Millesimo, tricensimo bis viceno

Primo: Xpc (Christus) ei pariet hinc sedem requiei.

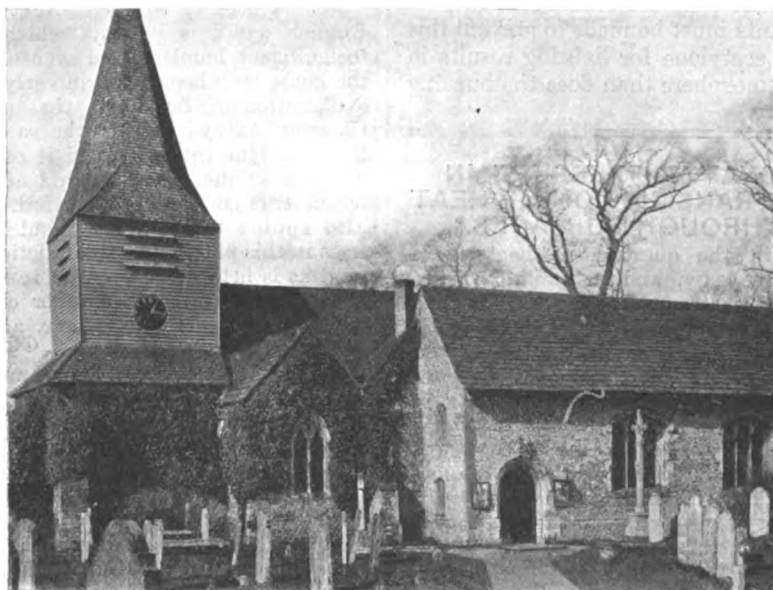
It was very clearly cut (on clunch stone), but is now rather damaged in one part. It is an interesting and

we may take Abbot Samson, of St. Edmundsbury, to have been, to whom Carlyle introduced us in his "Past and Present."

In 1537 Chertsey Abbey and its possessions were surrendered to Henry VIII., when its annual income was valued at £660 per annum, or according to Speed, £744 18s. 6d., equal to about £1,300 or £1,500 of our money. Part of an old oak screen, said to be the parvise glazed with common glass, forms a lobby or porch to the south entrance, and it was from here the Shier monument now in the north aisle was removed. The south porch is of later Decorated work. It is of two storeys; the upper one was probably intended for the use of a chantry priest. There is a narrow door in the wall of the south aisle, now blocked up, and another to what would have been the room above the east face of the west wall of the aisle. The roof of the south aisle is of oak, about 1390.

The Slyfield family, whilst they held Slyfield, built a chapel for their own use on the south side, and the work, except where repaired, remains unaltered. Traces of a private entrance, now built up, are visible both outside and inside the south wall of the chapel. There is the lower portion of oak screen remaining, said to be part of the old rood screen, and there are a few fragments of stained glass from the south window, which have been preserved.

There are some paintings of the fourteenth-century pattern decoration on the screen in the south aisle, and there is a fine trefoiled piscina on the south wall. The oldest brass remaining, that to the memory of Elizabeth, wife of Thomas Slyfield, date 1433, is in the body of the church near

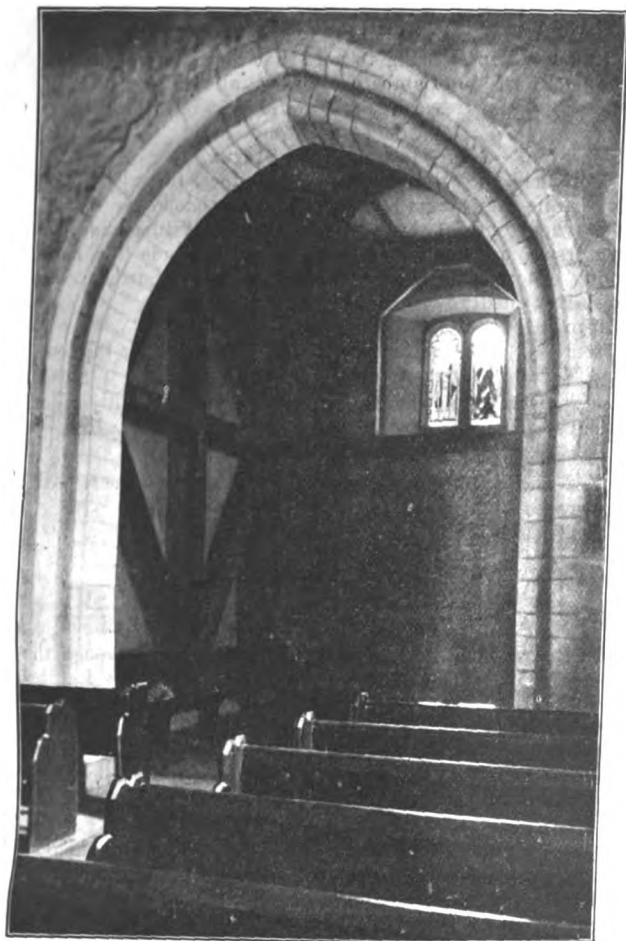


GREAT BOOKHAM CHURCH.

valuable record, because there are but few buildings possessing such recorded dates. There is a rare one in Holy Trinity Church, Clee, Lincolnshire, A.D. 1192; another at St. Mary's, Rolvenden, Kent, A.D. 1344; and at the most westerly church in England, St. Sennen, Cornwall, A.D. 1533. There is a peculiar one at Monken Hadley Church, Herts, where the date of the fifteenth century is given in figures, but in place of the ordinary figures four eights are cut in half, and there is an enamelled brass with date, I believe, at Cobham Hall. John de Rutherwick, Abbot of Chertsey, whose name is inscribed on this stone as the builder of the chancel, is otherwise recorded as being most active in such works. He appears also to have been a clear-headed ruler. His works were not extensive in themselves, but rather such as a master mind would find to do, in additions, repairing, and keeping all in order, over a large district. There are many records of the works done by him to the buildings which the abbey held, such as at Epsom, Ewell, and Egham. He was building a chancel just about this same time at Egham. But building was not his only work. He planted and enclosed, obtained remissions from the king and license to appropriate. He purchased the profits of Ewell Church, he obtained charters, bought lands and tenements. He gave Church vestments and a pastoral staff, thus looking to smaller matters. Doubtless his rule was very strict, and his labours unremitting. Elected in 1307, he died about 1346. In fact, he is just the sort of man

the pulpit, and is believed to be the oldest mention of this family. It has other memorials in the chapel floor, to Elizabeth, wife of Edmund, and also Henry Slyfield and his wife Elizabeth. The font is about the same date as the north arcade, and is a rather small one of hard Sussex shelly limestone, usually known as Petworth marble, found at Petworth, Chiddingfold, Bethersden, and elsewhere. This is of a similar nature to Purbeck, but of a much coarser description, containing larger shelly formation. I believe it was in 1845 a new aisle was built. This work has no claim to our notice. One of the bells in the tower, cast by the most celebrated of Surrey bell founders (says Mr. Daniel Tyson in his account of the "Church Bells of Sussex"), has this inscription on it: "William Eldridge made mee 1575." At the confiscation, the church, as part of the Abbey of Chertsey's possessions, was seized by Henry VIII., and for a short time transferred to Bisham in Berkshire, which in its turn was also dissolved (1539). Soon after, the advowson of the church was granted to Richard and John Savile, who sold it to Sir Christopher More, of Losely. He again sold it within a short time. In the inventory made by order of Edward VI. there is mentioned one chalice and "aulter" front, with the vestment for the Communion table and four bells. The brass or latten, which had not been stolen, was sold to the parishioners for forty-five shillings. The window at the east end of the chancel is to the memory of Charlotte Sophia, Duchess of Beaufort (1856); the one at the east end of

Slyfield Chapel is to Lord Raglan, the Crimean hero (1859) ; and the one in the aisle to Major-General Howard Vyse (1853). Several of the Howards of Effingham are buried here, and several of the Bonsor family. In this chapel are buried the successors of the Slyfields—"Here lyeth the body of Robt. Shiers, of the Inner Temple, London, Esqre., 1668" (1660). He was second son to George Shiers, Esq., who



GREAT BOOKHAM CHURCH.

purchased Slyfield Place, and he succeeded upon the death of his father, his eldest brother having died previously. There is a floriated cross on a slab in the churchyard, near south porch, of fourteenth century date, and in 1627 an elm was planted at the south corner of the churchyard ; the trunk is still standing and is sending upwards a group of sturdy branches—probably the identical elm that was planted, according to the parish register, during the churchwardenship of Ralph Hilder. The rough translation given by J. E. Morris, B.A., of the inscription on the slab in the interior east wall, to the south of the table, runs : "This house was erected by Abbot John de Rutherwyke, to the honour of St. Nicholas, in 1341. May Christ give him rest for this good work."

The inscription on a brass plate to Edmund Slyfield, who died in 1590, has a long and curious rhyming account of his virtues, &c., amounting to no less than twenty-eight lines. I have taken a few of the lines:—

"Of Slyfield Place, in Surrey solle here Edmund Slyfield lyes ;

A stout esquier who allweys sett Godes feare before his eyes."

And again :—

"He toke Elyzabeth to wyfe—a dame of famous rase,
She of the Pawletts dyd dissend, and Capells in like case.
And he with her, and she with hym, thaire dayes in love dyd pass.

In wedlock she brought fourthe to hym 5 sones and daughters 11,

Whiche carefullye they dyd instruk to serve the God of heaven."

In 1890 Major Heales remarked that the east end of the south aisle was parted off by a "mutilated screen." The lower part, still remaining, is of fifteenth century workmanship ; on the top of this is fixed a small brass plate, bidding us pray for the soul of John Barmsdale (d. 1481) and "Marion his wyf."

The Rev. J. Charles Cox in his paper on "The Religious Houses of Surrey" mentions Bookham : "In 1292 the Bishop of Winchester permitted the Abbot and Convent to retain in their own uses the church of Bookham, which was of their patronage, provided they presented a suitable person as vicar, with a sufficient income, to perform Divine service there. It was stated as a reason for this concession that the funds of the monastery (Black Monks, or Benedictines) had lately decreased, by exactions, by pestilences, and by the inundations of water that affected animals, flocks, and other property of Chertsey. Among the churches thus appropriated in Surrey in addition to Bookham were those of Cobham, Coulsden, Epsom, Ewell, Horley, and Waltham." The estates of the Abbey of Chertsey were free from the bailiff's jurisdiction.

There have been families of note in this village, as you have seen from the various memorial tablets in the church, and the most noteworthy are the Howards. There are several stones to members of the family of Howard of Effingham, formerly of Eastwick Park and lords of the manor of Great Bookham. On the floor south of the altar is a slab to Sir Francis Howard (1651), grandson of Lord Howard of Effingham who commanded the English Fleet against the Spanish Armada, and great-grandson of Thomas Howard, Duke of Norfolk. In the churchyard is a large vault, now completely covered and turfed over, containing seventeen members of the Howard family, mostly of the eighteenth century. On the floor at the east and west ends of the north aisle are two good armorial stones to Mary (1663), wife of Sir Henry Jerningham, and to William Wilder (1659).

In the parish register there is an interesting entry of the excommunication of the wife of an earlier George Shiers in 1633, and again in 1634 (she having apparently been absolved meanwhile), and of the husband also in the latter year, but for what offences does not appear (Sharp). There is a white marble tablet to Lord Downe, 1760, and other members of the Dawnay family, formerly of Bookham Grove. A monument to Cornet Francis Geary, 1776, eldest son of Admiral Sir Francis Geary. The cornet was killed in the American War. The Gearys lived at Polesden Lacey in



GREAT BOOKHAM CHURCH.

this parish till they sold the property to Richard Brinsley Sheridan.

The lych gate was erected in 1897 to commemorate the sixtieth year of Queen Victoria's reign. A stone coffin lid lies in the chancel, supposed to be that of John de Rutherwick. All the stained glass is modern.

Fanny Burney resided in this village for a short time, at a place called "Fairfield." The early days of Fanny

Burney were passed with the Thrales, at Streatham; with the Crisps, at Chessington; with the Lockes, at Norbury, near Dorking. At the Court of King George III. at Kew a tedious time was passed in the quiet retreat of a country home, living, as she expressed it, "without form or ceremony of any sort." It was, however, at Mickleham, near Dorking, and at Bookham, situate in the most picturesque part of the county, that much of her time was passed in literary work, and in friendship and intercourse with noted men and women of the day. At Mickleham her marriage with Monsieur D'Arblay took place in the year 1793, and a sojourn there of some years has claimed for this part a distinct and lasting memorial. It was here (Bookham) that the plans for writing her novel "Camilla" were considered. In 1796 the book was published by subscription, and dedicated to Queen Charlotte; and from this spot Madame D'Arblay set out to present the first copy to the King and Queen at Windsor, by whom it was most favourably received. The Surrey home which has the greatest interest in her career was "Camilla" Cottage, situated at West Humble, on land adjoining Norbury Park, the residence of Mr. Locke. The D'Arblays lived here till 1802, when they left for France, and Madame D'Arblay never resided in Surrey again.

St. Nicholas, Great Bookham.

"Thys inventory indentyd and made of all the ornamentys pertenying to the church of grett Bokham the X day of March in the iiij. yer of the reygne of Kyng Edward the VI. wytneth her of Sir John Hylton vycar, Rycharde Arnold, John Martyr, Rycharde May, John Hudson, Raff Stevyn.

Fyrst one chalys of sylver
Item iiij. corporas with casys
Item a pyx of coper and gylt
Item iiij. candylstyches of latyn
Item iiij. altar clothes
Item a curtyn of grene and blue satyn
Item another curtyn of sylk
Item a vestment of red velvett with a sute
Item a vestment of grene satyn with a sute
Item another vestment of sylk with a sute
Item a cope of grene satyn
Item ij syrplys
Item a crosse of latyn
Item ij cruettes of ledd
Item a canabe of Lynyn cloth
Item ij towelles
Item ij masse bokes
Item a senser of latyn
Item one banercloth of sylk
Item ij banerclothes the one of sylk and other of cloth
Item the sepulcre cloth
Item iiij belles in the stepull
Sir John Hylton vycar
Rycharde Arnold
John Martyr

churchwardyns

Nicholas Leigh
William Saunder
Thomas Martyr
Rycharde May
John Hudson.

It is recorded that the churchwardens of Great Bookham "Fyrst paid for the boke of Common Prayer iiij. viij. and for keping of the belles ijs."

"To the vijth and last article we say that there be no goodes imbeselyd nor left out of the inventorye to our knowledge otherwyse then afore ys declared

Sum receyved vjs. viij.

Sum paid vjs. viij.

And so neyther the churche ys not indettyd to the churchwardens nor the churchwardens to the churche."

There is a similar statement made with regard to Little Bookham, except—"Nothing was received and nothing paid." The Parliamentary survey of church lands in Surrey was made between 1649-1658, the Jurors being sworn in at Kingston-on-Thames on February 25, 1657.

"15.—Also wee present Richard Carter is present Incumbent of Great Bookham and is worthe flortie poundes by the yeare the patron thereof is Samuel Rouse Esquier. 16.—Lastly wee present that Mr. (blank) Henley is p'sent Incumbent of little Bookham and is worthe aboute fiftie poundes by the yeare the patron thereof is the Countesse of Peterborough and is halfe a mile distant from Great Bookham and very good way both winter and summer. In testimony whereof wee the Jurors aforesaide have hereunto sett our handes and seales this present Eighteenth day of Marche in the yeare of our Lord God 1657."

Richard Burnham	(Nine Seals)	John Pearce	Hen Carter
John King	John Pearce	Tho Smith	J. Lewitt
The marke of	Will Goulden	Will Goulden	Lebbens ffox
Jarvis Carr	John Fisher	Richard Law	The mke of
The mke of	Richard Law	mke of Nicholas	Goldwyer
John Cook	The mke of		
Matthew Brightridge	Humphry Harris		

It may be interesting to note that the Surveys, bound in Volume 21 of the Lambeth Library, all are of parchment with the signatures appended at the foot of each.

Bokham Magna.

Wardens—John Hudson, John Marter.

Deliverid into the churchwardens there the xvij day of Maye anno regni regis Edwardi Sexti septimo by Sir Thomas Carwarden Knight Nicholas Leigh and William Saunder esquiors commissioners of our soveraign lorde the King among other to that effect these parselles of churche goodes here after ensuing

Imprimis a chalice poiz xiiij oz.

Item an aulter front and a vestment for the communion table.

Also remaining in their charge to the kinges use iiij belles in the steeple.

Sales.

All the ornamentes then sold to the parishioners with the grasse and latten for xlvs. Summa patet.

(To be concluded.)

ART EXHIBITION AT MUNICH.

THE Board of Education have been informed, through the Foreign Office, that the eleventh International Art Exhibition will be held in Munich from June 1 to the end of October 1913, under the patronage of H.R.H. the Prince Regent Luitpold of Bavaria. The exhibition, which is organised by the Munich Artists' Association in union with the Secession of Munich, and with the assistance of the Royal Bavarian State Government, will be held at the Royal Crystal Palace of Munich. Works of art in the different branches of painting, sculpture, architecture, engraving, and art industry are admissible to the Exhibition. The management of the Exhibition is vested in the Central Committee at Munich, and further information can be obtained on application to the Secretary of this committee.

ILLUSTRATIONS.

DOORWAY, QUEEN'S HOTEL, YORK.

THE drawing shows one of the doorways in the dining-room on the first floor of the hotel. The room is lofty, and is treated in bays, formed by pilasters of the Corinthian order, surmounted by a rich entablature, above which the ceiling is coved. The inter-pilastration is filled by a large panel, below which is a smaller one. The ceiling is slightly modelled. The whole of the woodwork is painted white. The building was once the town house of the Duke of Sutherland, and dates back to the time of Charles I. An interesting feature of the building is the spacious staircase in the hall. The drawing reproduced was submitted in one of the monthly competitions of *The Architect Students' Sketching and Measuring Club* by Mr. E. H. Gibson, who has been awarded our Travelling Studentship for this year.

FRENCH INTERIOR DECORATION.

THE ceiling of the boudoir of Madame de Serilly was formerly at 106 Rue Vieille-du-Temple, Paris, and is now in the Victoria and Albert Museum, South Kensington. The centre painting is by Jean Jacques Lagrenée, called le Jeune.

The library of the Montagnacs was formerly at 52 Rue de Grenelle, Paris, and is now at the salerooms of Messrs. Litchfield & Co., by whom the photograph was taken.

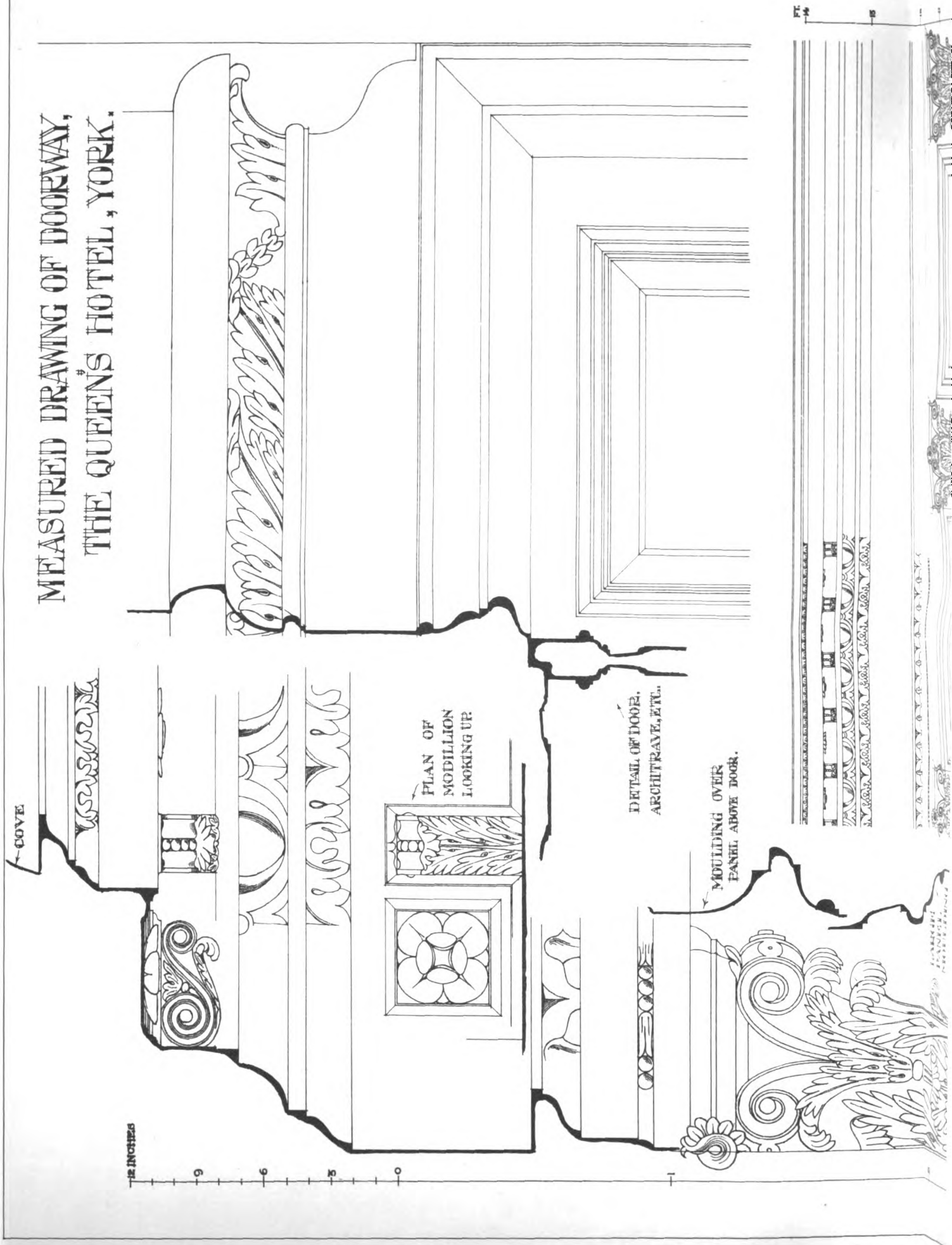
BOROUGH OF STOCKPORT ELEMENTARY SCHOOLS.

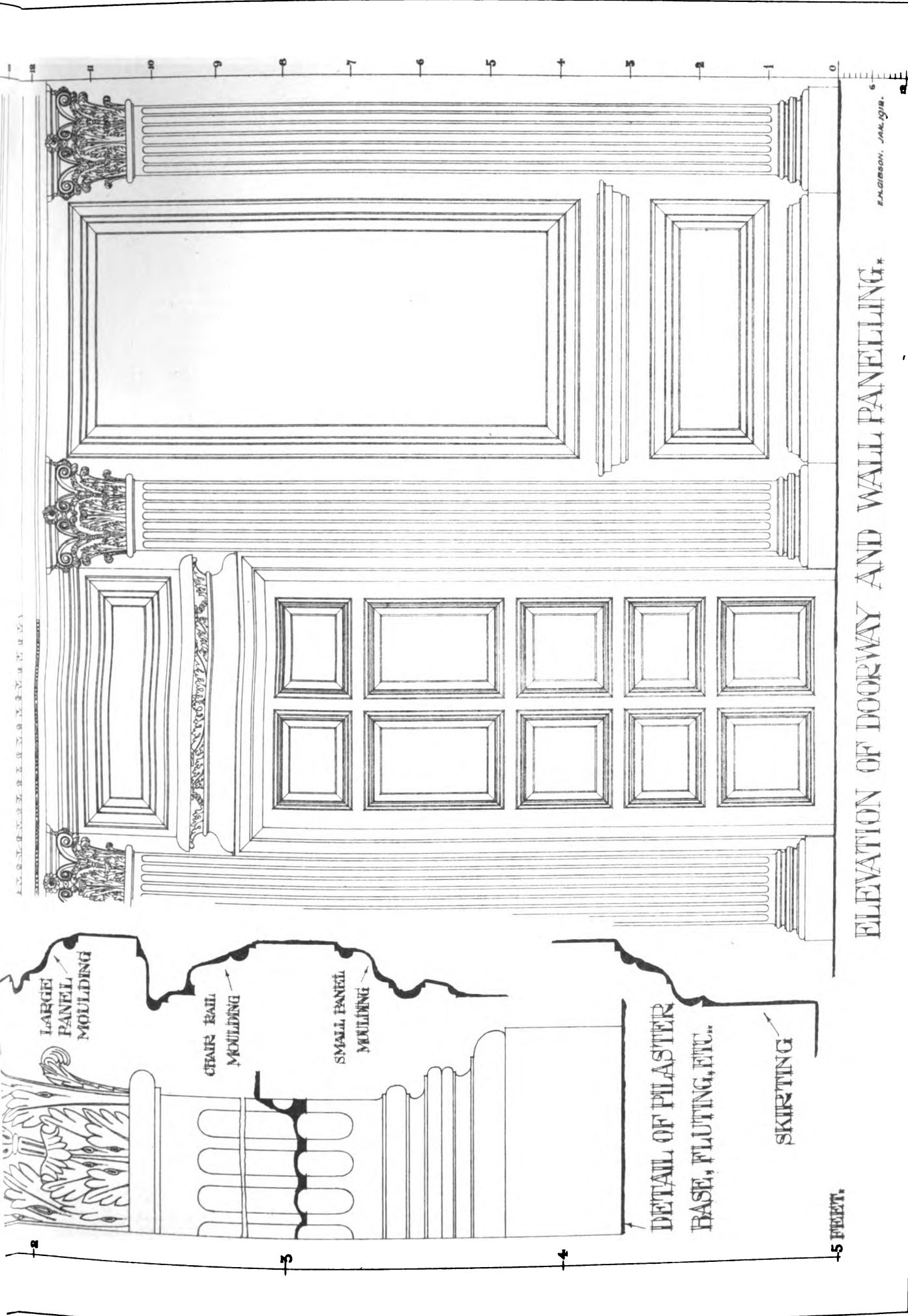
THIS school design by Messrs. Reginald H. Spalding, A.R.I.B.A., & Ernest G. Theakston, is a good example of the new type of elementary school plan.

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MEASURED DRAWING OF DOORWAY,
THE QUEENS HOTEL, YORK.





ELEVATION OF DOORWAY AND WALL PANELLING.

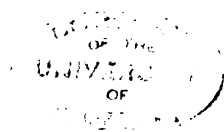
E. H. GIBSON, J.A.S. 1918.

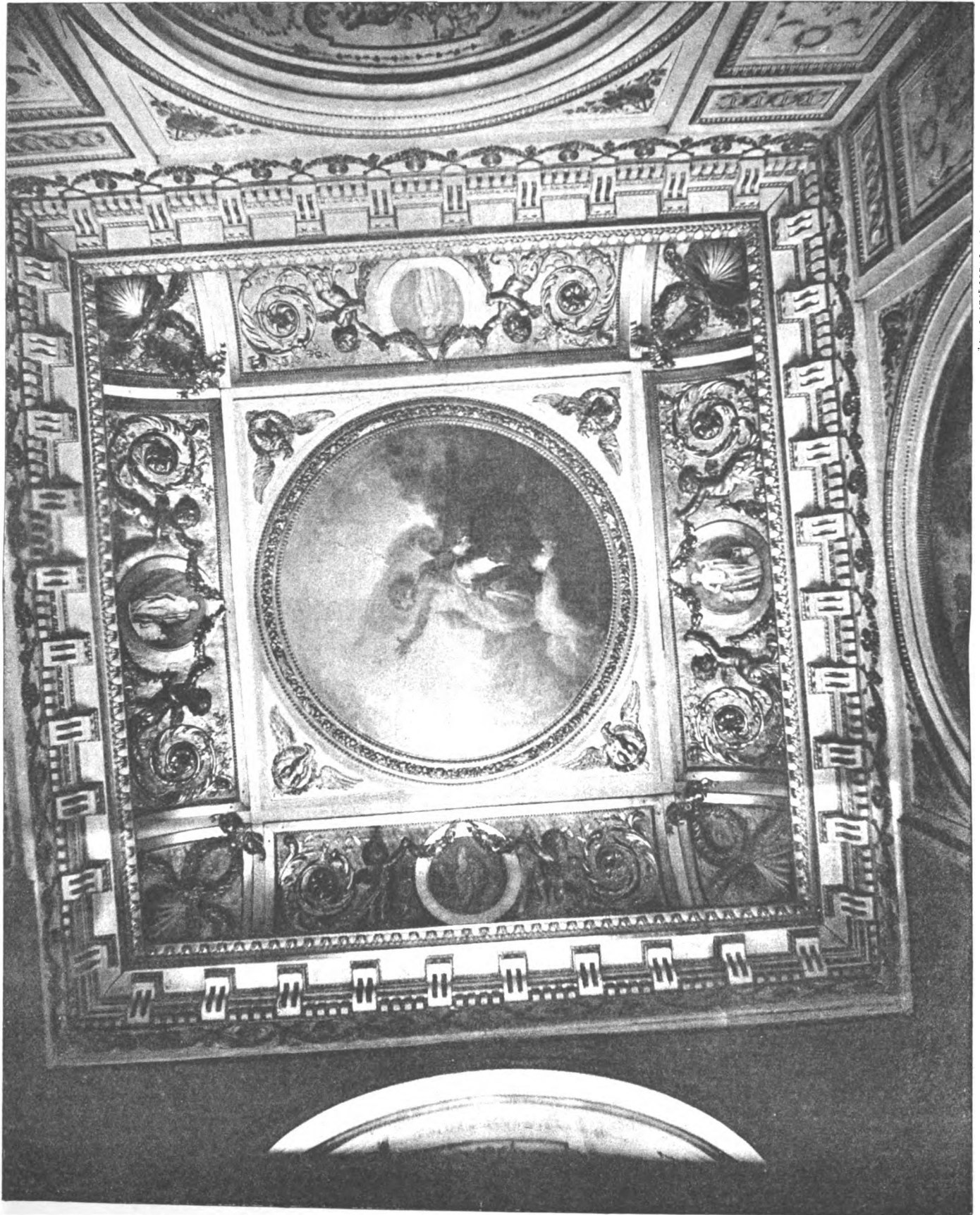
PHOTO-LITHO SPRAGUE & CO. L.V. 88 & 70 DEAN STREET, BONGH, W.

"THE ARCHITECT" STUDENTS SKETCHING AND MEASURING CLUB.

Drawing by Mr. E. H. GIBSON.

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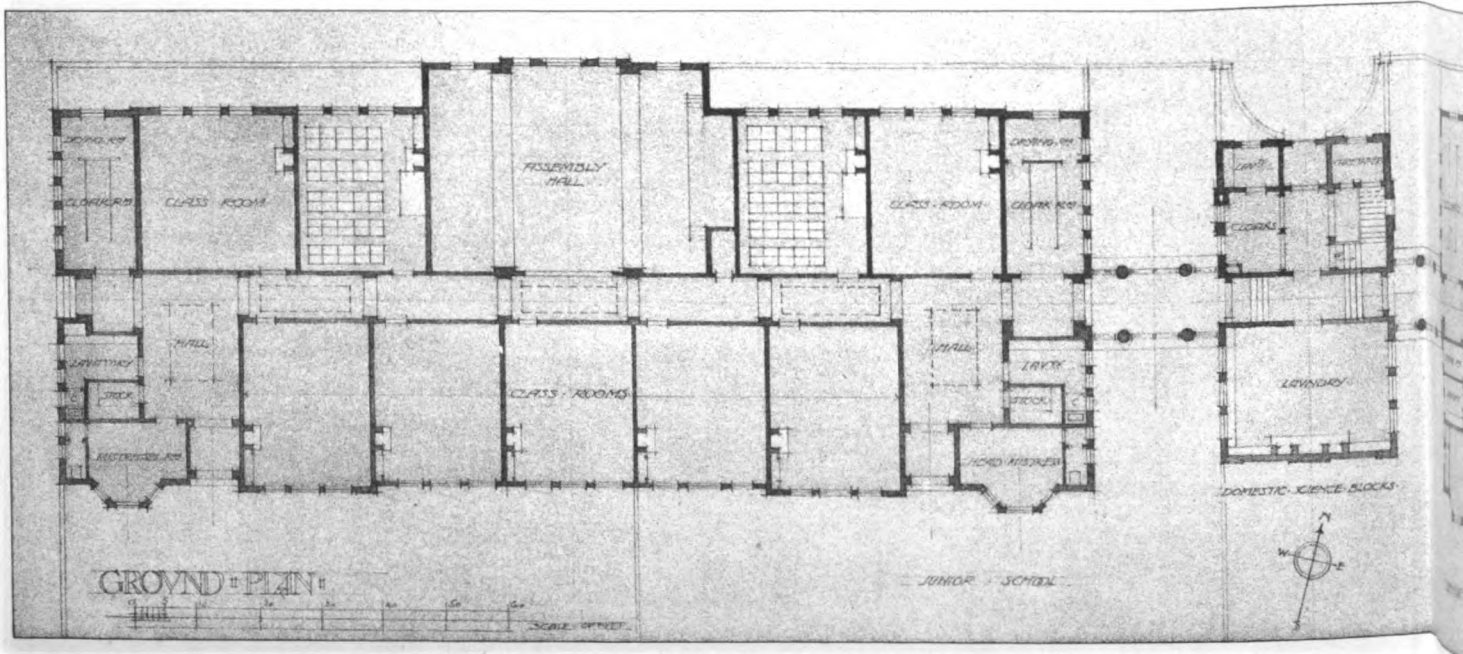
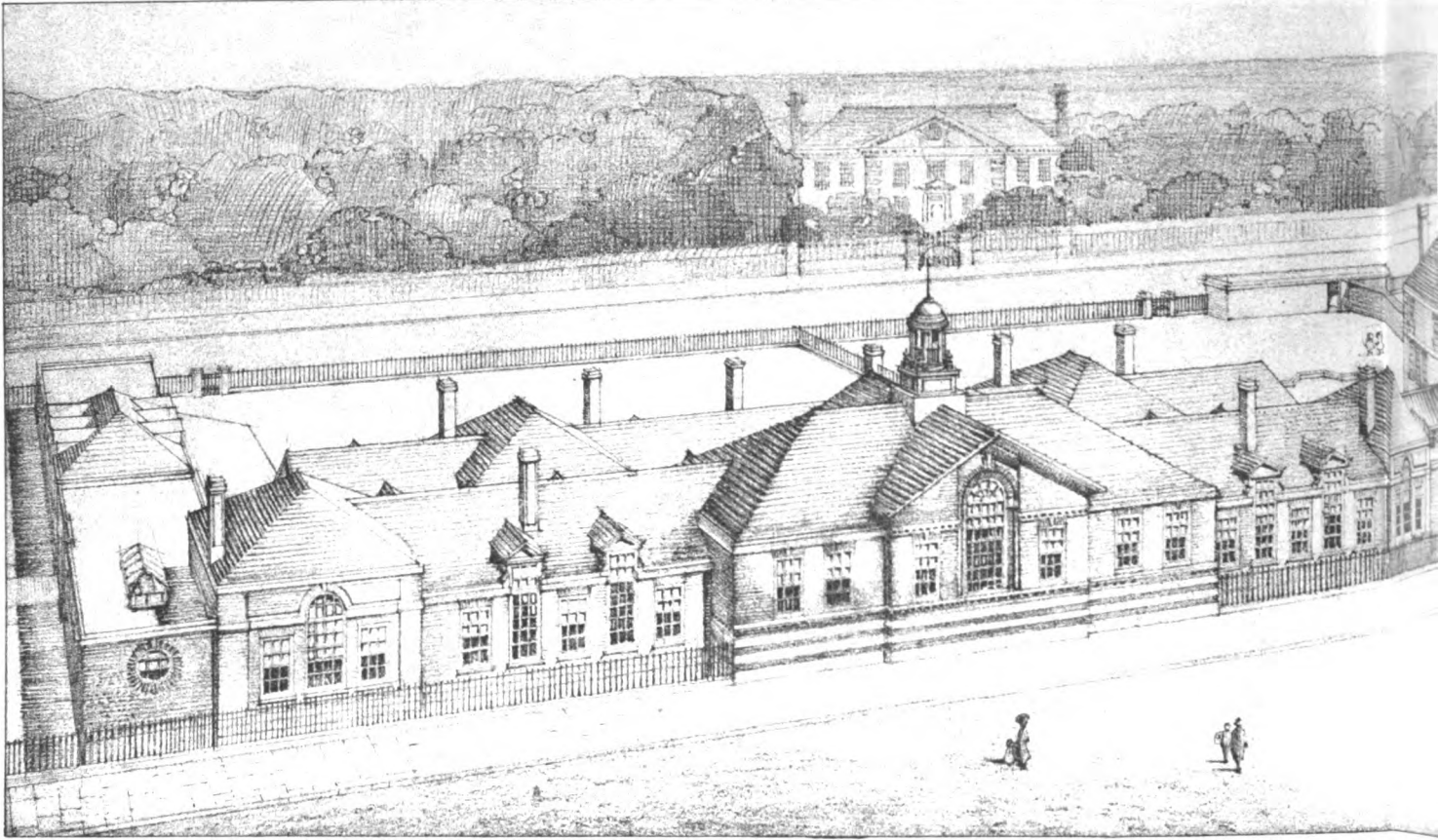


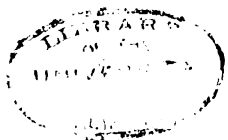


INK-PHOTO SPRAGUE & CO. L'ES 70, DEAN STREET, SOHO, W.

FRENCH INTERIOR DECORATION.
CEILING OF BOUDOIR OF MADAME DE SERILLY.







The Architect, July 12th 1912.



INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

FRENCH INTERIOR DECORATION.
LIBRARY OF THE MONTAGNACS.



INTERIOR DECORATION.—II.

By ALBERT E. BULLOCK, A.R.I.B.A.

FRANCE.—II.—THE EIGHTEENTH CENTURY AND AFTER.

(Continued from last week.)

THE tapestry industry established by Francis I. at Fontainebleau with Flemish workmen was carried on by Henry IV. The factories of the Gobelins at Bièvrebach and the Savonnerie at Chaillot date from about 1630. Carpets were chiefly manufactured at this latter place in the seventeenth and eighteenth centuries. There were also factories at Beauvais, where Oudry superintended, and at Aubusson, where Jacques Bertrand worked on the designs of Corneille, and also those at Felletin. Besnier succeeded Oudry at Beauvais about 1734, and Boucher superintended other departments. The industry suffered much at the hands of Colbert's successor, Louvois, who is credited with little taste for art, and much less commercial instinct than Colbert. He had a friend in Mignard, the rival of Le Brun, who died in 1690, and Mignard five years later. Villacerf succeeded Louvois, and the Duke d'Antin became director of the industry. He employed Robert de Cotte to superintend the execution of the work, a post the architect maintained until 1736. About 1713 Le Sieur Dagly, who lodged at the Gobelins, introduced the making of Japan ware, which was later developed by Vernis Martin, a carriage painter, born in 1706. The name Vernis de Gobelins is given to work of this class.

André Charles Boulle, the well-known joiner and cabinet-maker, practised in inlaid veneer work known by his name, consisting of marquetry laid on a ground work of parquetry ornamented with chased and shaped metals, tortoise shell, pearl and ivory inlaid between the hardwood veneers. The designs were usually cut in pairs and counter-changed in the manner known in joinery as quartering. Daniel Marot has been reserved to this paragraph on account of his connection with Boulle, although he really belongs to a previous generation. His style of decoration exists at the Elysée in the Salon des Aides, the fine shell carved panels having been brought here from the Château de Bercy, built by François Mansart for M. Paris. Marot went to Holland upon the revocation of the Edict of Nantes, where he made the acquaintance of our William III., who employed him as his architect. He and the younger Berain made many designs for Boulle work.

The illustrations of Versailles are from Rouyer. The Salon de la Guerre was painted by Blanchard under Le Brun; the carved oval of Louis XIV. is by Coysevox, who also modelled the bronze figures. The Louis XV. example is from the Salon des Médailles, Adelaide wing, showing a typical casement and chimney-piece. The illustrations from Pfno's "Fontainebleau" show the decoration in the gallery of Henry II., Martin de Freminet's work in the chapel of Henry IV., Saint Trinité in 1608, the throne room of Louis XIV., and a small example of Louis XV. period from the council chamber. This latter room was designed by François Boucher, the panels being painted by J. B. M. Pierre, and the flowers by F. Peyrotte. Christophe Huet was responsible for the ornaments; he was particularly skilled in arabesques and designs for tapestry. There are examples of his work at the Château de Chantilly, in the Cabinet des Singes, where the little monkeys sport themselves with all the cheek of the life, and at the Hôtel de Rohan, where are also to be seen examples of the style called "Chinoiserie," a light style of ceiling and mural decoration practised by Le Brun, Leseur, Coppel, Vouet, and Natoire. Berain's ceilings were of a light Italian style, while the work of Watteau, Huet, and J. B. Leprince followed the school of Mantegna, with trellis work prominent in the design.

The salon of Louis XV. at the Louvre, executed about the same time as Huet's Cabinet des Singes, is a distinct contrast, exhibiting a much severer style, a plain wainscot, and a rather heavy ceiling. The wrought-iron grilles of Jean Lamour at the Place Stanislas, Nancy, laid out by Emmanuel Héré, and the balustrade to the Hôtel de Ville built by Héré de Corny are examples of the late work of this reign. The staircase rail at the Petit Trianon is a late work by François Gamain; in the salle-à-manger of Marie Antoinette here the chimney-piece is the work of Honoré Guibert. The steel and iron gilt rail to the staircase at the Palais Royal is the design of Coutant d'Ivry, and was copied at Chantilly for the Duc d'Aumale. The subject of English ironwork has been recently dealt with by Mr. J. Starkie Gardner, in which several French examples are referred to.

French sculptors are legion. Many worked at will on the

softer materials of decoration of the plastic order, and it is not a little difficult to bifurcate them. The names of Pajou, Lecomte, and Moineau stand out prominently, as their work was very popular. There are statues by them in the dining-room of Madame Du Barry's château at Luciennes. The ceiling of the room is a painted Olympus; the walls are of marble, with Corinthian pilasters having gilt bronze caps and bases. The bas-relievo frieze is framed in gilt mouldings, and crystal chandeliers are attached to the mirrors. There are similar specimens of this style of decoration at Choisy, Gaillon and Rambouillet. A late Louis XVI. dining-room exists at the Palace of Compiègne, which is decorated with fluted Ionic pilasters in pairs the full height of the wall to the entablature. The carved panels to the over door and the chimney-piece are in grisaille, by Sauvage. The later work at this palace is a trifle stiff in treatment. The bedchamber of Marie Antoinette here is attributed to Rousseau (de la Rottière), and, if so, it compares rather unfavourably with his earlier work at Fontainebleau and elsewhere.

The family of the Caffieri figure prominently in the annals of French decoration. Philippe Caffieri was brought from Rome by Mazarin, and was installed at the Gobelins by Colbert, who employed him at Versailles and Dunkirk, at which latter place he acted as sculptor to the vessels then in course of building. He was succeeded by his eldest son. His fifth son, Jacques, the father of Jean-Jacques, was gilder and carver to the King. Philippe Caffieri II. and Jean-Jacques were brothers. The latter was an eminent member of the family who was brought into distinction by his noted altar of St. Louis des Français at Rome. Another distinguished family are the Audrans, of whom Claude the second (1639-84) distinguished himself in fresco work under Le Brun. He painted the chapel of Colbert's château at Sceaux, the gallery of the Tuileries, the grand staircase at Versailles, and other works. At the Tuileries he was assisted by the artists F. Bonnemer, Monier, the younger Corneille, and the younger Vouet on the ceiling of the King's audience chamber. This work is now destroyed, as is also the gallery of the Hôtel de Bretonvilliers in the Ile St. Louis, where nine compartments of the ceiling were painted by S. Bourdon, who was also a skilled engraver. Fortunately, his designs were engraved by Friquet de Vaurose, a pupil, prior to the demolition of the work. Some very interesting lists of artists and workmen who left Paris for St. Petersburg in 1716 with Le Blond and Pineau to work at Potsdam, of the Gobelins officials, and of French cabinet-makers from "Le Mobilier au XVII. et au XVIII. Siècle," are given in the appendices accompanying "French Decoration and Furniture in the Eighteenth Century," written by the late Lady Amelia F. S. Dilke, 1901.

It is not the intention to treat the different styles of French furniture which accompany each period of decoration, as has been common among writers on the subject previously, partly on account of the limited space available for the purpose, the magnitude of the subject in hand, and largely because the practice has gone out of vogue in consequence of the expense attached to securing genuine examples of such work and the unsuitability of much of it to modern requirements. The museums already mentioned contain examples *in extenso*, and the work last referred to, together with "The Decoration of Houses," by Miss Edith Wharton and Ogden Cotman, junr., and many other like works, contain numerous illustrations showing the application of the furniture of each period in connection with the architectural decoration of the same.

The chief cabinet-makers besides those already mentioned were Slodtz, Riesener, Oeben, Petit, Thomire, Martin Carlin, and many others. Thomire was also a painter of porcelain for the Sèvres works, with Boizet, Carlin, and Paftrat. De la Fosse, Jacques Caffieri, and others executed metal work. The manufactory of Sèvres, which owes its success so much to the patronage of Madame de Pompadour (d. 1764), who set the fashion in art during the reign of Louis XV., was established between 1753-56.

Coppel's original cartoons for the tapestries illustrating the life of Don Quixote are at Compiègne. The subject occupied the looms nearly one hundred years, i.e. from 1735 to 1830, the works being then under the management of the Comptroller, General Orry.

(To be continued.)

PRINCIPAL FRENCH ENGRAVERS.

Jean Duvet	1485-1560
Etienne Delaune	1518-1598
Jean Rabel (and Painter)	1550-1603
Thomas de Leeuw	1560-1612
Philippe de Leu	1570-

Pierre Valet	1575-
Daniel Rabel	1578-1628
Louis Beaubrun	-1627
François Perrier (le Bourguignon)	1590-1656
Jacques Callot	1592-1635
Jacques Bellange	1594-1638
Charles Audran	1594-1674
Madeleine Masson	-1666
Michael Lasne	1596-1667
Claude Audran	1597-1677
Claude Mellan	1598-1688
Abraham Bosse	1602-1676
Pierre Daret de Cazeneuve	1604-1678
Jean Morin	1609-1666
Gregoire Huret	1610-1670
Gilles Rousselet	1610-1686
Nicholas Cochin (son of Noël Cochin of Troyes)	1610-1686
Jean Lepautre	1617-1682
Nicholas Régnesson	1620-1676
Israel Silvestre	1621-1691
Robert Nanteuil	1623-1678
Jean Pesné	1623-1700
Pieter van Schuppen (Flemish)	1627-1702
Noël Coypel	1628-1707
German Audran	1631-1710
Etienne Picart (the Roman)	1631-1721
Guillaume Chasteau	1635-1683
Claudine Bouzonnet Stella	1636-1697
Antoine Masson (and Painter)	1636-1702
Etienne Baudet	1636-1711
Sébastien Leclerc (and Designer)	1637-1714
Gérard Audran	1640-1703
Gérard Edelinck (Flemish)	1640-1707
Hans Cornelis Vermeulin (Dutch)	1644-1710
Pierre Giffart	1648-
Jean Jacques Tournier	d. 1670
Benoit Audran	1661-1721
Antoine Coypel (from Noël's first wife)	1661-1722
Charles François de Silvestre	1667-1738
Jean Audran	1667-1756
Louis de Silvestre	1669-1740
Claude Gillot	1673-1722
Bernard Picart	1673-1733
Jean Berain	1674-1726
Jean Simon	1675-
Nicholas Edelinck	-1730
Louise Magdelene Hortemels	1686-1767
Louis Surugue	1686-1769
Jean Baptiste Massé	1687-1769
Charles Nicholas Cochin	1688-1754
Noel Nicholas Coypel	1692-1734
Comte de Caylus	1692-1765
Charles Antoine Coypel	1694-1752
Nicholas Charles de Silvestre	1698-1767
Hubert Fr. Bourguignon Gravelot	1699-1773
Charles Nicholas Cochin II.	1715-1790
Pierre Louis Surugue	1717-1771
Jean Baptiste de la Fosse	1721-1775
Hubert Robert	1733-1808
Campion	1734-1784
Vivant Denon	1747-1825

THE WORKS OF THOMAS GIRTIN AND OTHER ARTISTS.

WE believe that it was Sir Gilbert Scott who said that if a man had not made a name or position for himself by the time he was thirty years of age he was a failure. Perhaps Scott did not word it quite so baldly or broadly, but that is the effect of the statement. In Thomas Girtin (1775-1802) we are confronted by a brilliant instance of early fame, for he was an artist of note before he attained his majority, and he was in the zenith of his powers when he died. Early fame, yes! But where are those who now think or speak of Girtin, except the few art-historians and the fewer veteran artists? *Eheu! fugaces labuntur anni.*

At the exhibition of works now on view at the Leicester Galleries there are altogether close upon one hundred and fifty pieces, and of these eleven are the work of Edward Dayes and twenty-two are the work of Thomas Girtin.

And we will first consider these two artists, just noting an interesting similarity in the experiences of Thomas Girtin and Benjamin Franklin. The latter was subjected to the harshness of a brother, to whom he was bound apprentice, and who jealously resented the attention paid to the latter

for his natural gifts; so, too, did Edward Dayes act towards his apprentice Girtin under similar conditions.

Girtin kept for a time remarkably close to Dayes' methods of workmanship and style of work, but later on he broke fresh ground, and was accorded the general approval for his work on independent lines. So much (or so little) by way of history.

One great point of similarity between the work of these two artists was the particular method of delicately touching-in the skies. As regards Edward Dayes, he had a happy knack of giving the effect of "haze" to the atmosphere; "Old Aberdeen Cathedral" and "Dunfermline Abbey Church" show a yellow haze, whereas in "Pluscardine Abbey, Elgin," the effect is blueish, and in "Elgin Cathedral" it is grey. All these works date from 1792. "The Observatory, Greenwich," "The Market Place, Salisbury," and "Castleacre Priory, Norfolk," are too clear-cut in technique to be altogether pleasing.

Of Girtin's works now exhibited the better are mostly to be found amongst those painted during the last three years of his life. "St. Vincent's Rocks, Clifton" (1802), is perhaps the best; there is very little light in the treatment, but the shade effects are good, and the bold cliffs, with the river coursing through the deep gorge, provide a tout ensemble altogether impressive. "The Valley of the Wharfe" (c. 1800) is also in gloom, and is equally impressive in its pictorial display; "Landscape with the Wooden Bridge" (1802) is very pretty, and is softly toned. One of Girtin's earlier works, "Helmsley Castle, Yorkshire" (1792), is reminiscent of the Dayes' influence, and the snow-clad ruins are excellently portrayed. "Carnarvon Castle" (1801) is noticeable for the good "scale" which the building provides in the picture.

From the work of other artists architects will select with interest specimens by George Dance, R.A., and Paul Sandby, R.A., the latter's "Rochester," with its blue distances, healthy foreground tree, and cloud-bedecked sky, providing a truly worthy sketch. A curious picture is J. C. Ibbetson's "The Artist Sketching," where the said artist is seated in the middle distance with his back towards us, and obviously not in a position to portray both the foreground and the background, except he were Mr. Facing-both-ways, and obviously in the present instance not in a position to portray the foreground, towards which his back is squarely set. We much admire H. Bunbury's "Three Dancing Girls" for the graceful posing, the delicate tinting, and the pleasing vignetting. For T. Rowlandson we can never feel enthusiasm; if we say that in some of the exhibits he is not intolerable 'tis but damning with faintest praise. But there is an exception, for whereas the "Interior of the British Institution" is quite unpleasantly and completely Rowlandson, "Shipping," by the same artist, is quite as pleasantly un-Rowlandson.

D. H. McKewan's work is worthy of note. "Tapestried Bedroom, Cote-Hele," being attractive in its delicate colouring, its chiaroscuro, and its well-depicted hanging draperies. "At Knowle," by the same artist, might be the work of John Nash himself, but it proves less pictorial than the last, though it is so good. J. R. Cozens' "Lake Albano" is on a level of excellence with the "St. Vincent's Rocks," by Girtin, and G. A. Fripp's "Near Tintagel" is very fine, and is full of artistry; the water is tonefully realistic, but the rocks would bear strengthening.

P. de Wint's "Wenlock Abbey" has, like so many on show, pretty evening colouring, with all the evening calm suggested. Notice must be accorded to the joint composition of two Associates of the Royal Academy; "The Falls of the Tay," by J. W. North and F. Walker, is truly delightful, and the swirl of the waters could not be better depicted. There is nothing more worthy of notice than H. Gastineau's "Richmond Hill" (1852); it is a perfect poem of idyllic beauty. G. Barret's "Classical Landscape" is good, whether viewed in regard to its clear evening sky, its water, or its architecture.

There is but one example of John Ruskin, and that not admirable, "Glacier des Bossons, Chamounix," being a very confused colour sketch. Mr. J. M. Swan's, R.A., zoological studies are all thoroughly good, and well modelled. Of the fifteen pieces by W. Callow three alone prove of interest, and of these only one, "Leicester Almshouses" (1856), is really pictorial. H. G. Moon's two studies of orchids are excellent. A. N. Roussof's "A Side Canal, Venice," is a charming little wayside colour-piece; this and F. Mura's "A Winter's Day" are two of the comparatively few pre-eminent exhibits. The latter is very telling in free sepia, with the lights beautifully managed. The show is one well worthy of close and prolonged inspection.

THE PAINT AND VARNISH SOCIETY.*

(Concluded from last week.)

THE President (Mr. J. Russell Thornbery) said he felt that although much of the matter introduced by Mr. Line into his paper had gone far outside the actual subject under discussion, it was not to be regretted, as it would not be well for the Paint and Varnish Society, in considering the toxicity of white lead, to shut their eyes to the fact that strong objections were raised to the use of lead in other industries, on account of the bodily suffering caused to a great number of individuals engaged in trades in which lead in various forms was employed. So far as he was concerned, he was not interested in white lead, and had nothing to do with it in his business. He, personally, could hardly understand any but decorators or ignorant people making use of it for decorative work in such towns as London or Sheffield, as, in his opinion, other materials could be used with a greater advantage; but, although there were differences of opinion in the paint and varnish trade upon that question, he felt sure that all were much more interested in the wider subject of doing everything possible to guard the interests of all workers in lead, and that vastly larger number of human beings who, in one way or another, came in contact with it. The personal interests of the members of the Paint and Varnish Society were small compared with the benefit of the human race, and he thought the Society should not allow that consideration to be excluded. Mr. Line was obviously an enthusiast on the abolition of white lead, and from many passages in his paper it would appear that he went much farther, and would like to prohibit the use of lead in any form for any purpose. The President said he was not one of those who objected to enthusiasts or fanatics; he always felt that they had studied their subject, although it might be only one view of the subject, still they had specialised in a part, and it was always well to hear a specialist. Mr. Line's propositions were far-reaching, inasmuch as the lead trade entered into an enormous number of industries. In linking up the particulars of the ill effects of lead as Mr. Line had done, and in the marshalling of his statements and figures, he had succeeded in putting before the Society an appalling tale of suffering. In the bulk the figures were impressive, but if they were spread out over the whole of the very large area represented by the trade in lead they would not afford much covering. Mr. Line had also furnished information from all parts of the country and all over the world, even from America, and although we had no control over what other countries were doing, lessons might be learned from them. The fact that Mr. Line had mentioned the great reduction in cases of sickness which had been effected by one method or another, proved that it was the conditions under which people worked in lead, rather than the material, which were at fault. What was required in the case of the use of lead was that attention should be fixed upon the improvement of methods, and not upon the abolition of the use of the material. The speaker was not impressed by the comparative figures, as between 1910 and 1911, inasmuch as such figures might easily be affected by fluctuations in trade. There had been a gigantic increase in employment in certain industries of late years, and the enthusiasts for the abolition of lead held up hands of holy horror at the appalling increase in lead poisoning. The increase might have been proportional, but the only way to make comparisons was over a lengthy period allowing for fluctuations in trade. Had the figures been taken for a period of, say, 20 years, he believed that it would be found that with increased attention to ventilation and general care and cleanliness in the conditions of the workers, there would not in the near future be much to grumble at in the conditions of the lead worker or user.

Mr. J. G. McIntosh objected to the compliments paid by the author to the work of Sir Thomas Oliver, whom he regarded as being ignorant of what happened when a drying oil dried. Had he been conversant with, and realised the fact that the atmosphere was robbed of its oxygen, he must, perforce, have come to quite different conclusions to what he had done. The oil absorbed oxygen, and in a confined atmosphere it would be chiefly the inhalation of an atmosphere with nitrogen in far greater excess than usual that would play such havoc with the red corpuscles. The coach-painting trade afforded an instance of the absorption of

oxygen, and of working in such a confined, warm atmosphere, with nitrogen in excess, and oxygen not in sufficient amount to aerate the blood. It was untrue to say that white lead paint gave off lead fumes. Even Professor Baly himself had retracted. Pure alcoholism was often confused with lead poisoning, and many authorities (medical) asserted that were alcoholism done away with lead poisoning would disappear. He did not think that Mr. Line had been quite fair in his quotations from Sir Thomas Oliver. He omitted the fact that the latter had given $\frac{3}{4}$ oz. of white lead to a rabbit in 18 months, without any sign of plumbism; whereas it was on record that 7 grains of zinc oxide had killed a rabbit. The speaker denied that there was an ever-increasing danger of plumbism; as Mr. Line had said, State regulations had enormously diminished plumbism all over Europe. The speaker referred to Dr. Goadsby's experiments, in which the latter found that lead sulphate was more soluble in the gastric juice than litharge or white lead. He had himself dealt with the subject in lectures delivered at the Regent Street Polytechnic 27 years ago, and in which he predicted this same result. As the chairman had remarked, other substances than white lead were poisonous. Sir Robert Christison, one of the most eminent of British toxicologists, had chronicled the case of seven men totally paralysed in the lower part of the body, from the waist downwards, in one factory in Glasgow, due to working with black oxide of manganese. Lithopone, as a pigment, was even worse than zinc oxide, and neither constituted a substitute for white lead at all. It was a well-known fact that an equal number of coats of white lead and zinc oxide did not cover the same surface, as many as four coats of zinc oxide being required to cover the same surface as three coats of white lead. With regard to the Pasteur Institute experiments, the French practical paint experts on the committee had themselves condemned these experiments, and withdrawn from them in disgust. As all would be aware, zinc oxide was attacked by sulphurous acid. It had been the burden of all the experiments made hitherto to prove the impossible, viz., that zinc oxide was better than white lead. In applying zinc oxide and white lead paints authorities were agreed that zinc oxide paint required quite different treatment altogether from white lead paint; and if white lead were forbidden working painters would never take kindly to zinc oxide paint, as the difficulties in its general application were very great.

Mr. W. F. Reid referred, in the first place, to the assimilation of the lead in the system. It had been stated that sulphate of lead was assimilated more than white lead, but the speaker did not consider that in all cases it was the gastric juices that assimilated the lead; the greasy secretions of the skin were most active in this respect. Lead was absorbed in the same way as mercury, by mixing it up with the fat. Persons secreting greasy matter in the perspiration were particularly liable to the absorption of lead in contact with the skin. He had, indeed, made tests of individuals susceptible to lead poisoning. The method was to take a piece of coloured tissue paper and press it against the portion of the body secreting perspiration, especially the nose or temple. On holding it up to the light after drying it would be found that little globules of fat had been absorbed by the paper. As had been pointed out, the expansion or diminution of different industries had a greater effect than the greater or less use of lead. Lead, for instance, was not made in Newcastle to the same extent as formerly; and he did not think the lead poisoning of painters was capable of comparison with the lead poisoning of factory workers; the factory worker might handle tons where the painter handled pounds, the same quantity of lead, therefore, coming into hundreds of hands instead of one pair. Painters, of course, handled the material very intimately. He could not otherwise account for the large number of cases of lead poisoning in the coach-building industry than by suggesting that it was due to the rubbing down of numerous coats of paint, which produced a dust that was inhaled. The speaker had been in the habit of oxidising large surfaces of linseed oil, which had been treated with lead driers. He had worked about a dozen buildings, each having a surface of 600,000 square feet. The air was saturated with a volatile product which, he might say, was chiefly acrolein. It might be thought that with such a large area there would be numerous cases of "lassitude and sickness," but he had never met with any evil symptoms among the workmen excepting violent irritation of the mucous membranes, particularly of the eyes and nose. He thought the question of leadless glazes had been overdone. Our Government had done as much as any Government to diminish sickness caused by dangerous occupations. Generally speaking, lead poisoning was often attributed to certain

* Discussion on a Paper entitled "The Toxicity of Lead," by Mr. Charles A. Line, which appeared in instalments in our issues of June 21 and 28, and July 5.

occupations, when it might have been derived from other sources. The action of lead had to be considered on what Metchnikoff had called the "flora" in the human bowel. Some of the diseases caused by minute quantities of lead might be due to the poisoning of this flora, which, as recent investigations had proved, had a great influence upon health. A small quantity of lead or mercury might cause the destruction of these minute beneficent organisms.

Mr. C. A. Klein said that it would be a matter of interest if the author could show the method by which he had been able to foreshadow the report of the present White Lead Committee. The speaker had been a witness before that committee, and certainly considered that until a report was published it was incumbent on all to avoid expressions indicating their ability to foreshadow the conclusions of a committee whose proceedings were as yet private and confidential. It was therefore surprising that Mr. Line considered that he was able to forecast the findings of the committee. He did not think that Mr. Line had added anything to the report of Sir Thomas Oliver made to the Bureau of Labour at Washington. Indeed, the lecture was a résumé of this report, with no additions of any real value by the author. Those who knew that report would feel that Sir Thomas Oliver had not been altogether impartial. A ghastly array of figures and statements had been presented which did not represent the present position of affairs, as was obvious when one found that the figures of Mr. Line were incomplete and not up-to-date. It was only necessary to read the first ten pages of the report to realise that technical inaccuracies were frequent, even with regard to such details as the descriptions of the processes used in the manufacture of lead products. Mr. Line had stated that British lead was mined in a metallic state, and that the freedom of the British miner from poisoning could be explained on this account. This was but one instance showing the course adopted by the author—namely, the repetition of other people's statements without verification. The statement in question was due to Sir T. Oliver, page 4, Bulletin, Washington. The lead was mined as galena (lead sulphide), and the comparative immunity of the miner from lead poisoning was not difficult to explain. It was well known that lead sulphide was probably the least soluble lead salt in general use in consequence of the fact that the process of solution in the gastric juices was limited by the reversible nature of the interaction in which equilibrium was readily established. Advantage had been taken of that fact in more than one lead works in England, where the men had been supplied with sodium sulphide pills, so as to produce lead sulphide, which was insoluble, or practically insoluble, beyond the equilibrium stage in the gastric juices. The experiments of Dr. Goadby supported these conclusions. When dealing with basic sulphate of lead Mr. Line was by no means clear in his remarks. In one part of the paper he had said that lead sulphate was not as soluble as lead carbonate, but later on he had quoted Dr. Kenneth Goadby in this relation, but had not given any figures or shown how the experiments were carried out, and the speaker felt he must protest against this irregular way of presenting figures. The experiments were, however, of vital importance, and should be properly recorded, because they were the only experiments on record in which human gastric juice had been used; in all other cases artificial gastric juice had been employed. The juices had been obtained from patients in the hospital, and had been used to determine the solubility of red lead, litharge, white lead and sulphate. The figures showed that (see Appendix Vol. II. Pottery Report, Cd. 5219) even allowing for experimental error lead sulphate was more soluble than white lead or litharge. It was perhaps necessary to point out that the speaker was not personally interested in the manufacture of basic lead sulphate, so that his remarks could not be influenced by any bias. The most important aspect of the question was brought to light when one considers the dangerous position to which the painter was exposed if he relied on some of the current statements in which basic sulphate is regarded as being harmless. The experiments of Dr. Goadby had afforded an explanation to white lead manufacturers as to why the old practice of giving sulphuric acid drink was useless, and in many works this had been abandoned. The blue line on the gum was no positive proof of lead poisoning, and the English Home Office no longer regarded this line as absolute proof of lead poisoning. The blue or black line was found to result from contact with the products of other metals, and was not observed in workers who took care of their teeth. The speaker was interested in Mr. Line's remarks as to the toxic fumes. The author had stated that Professor Baly, of Liverpool, had been able by chemical and spectroscopic tests to show

that white lead gave off toxic emanations. All that Professor Baly had shown was that volatile products were formed during the drying of linseed oil as contained in the paint; but it was impossible either by chemical or spectroscopic methods to determine that such vapours were toxic in their effects. This feature must be reserved for animal experiments, and, further, the practical conditions must be borne in mind in such experiments. Professor Baly had last year read a paper in which he showed that white lead (not basic sulphate nor zinc white) gave rise in the course of drying to volatile products, and definitely stated that these volatile products contained lead. As a sequel, however, the Professor had read another paper, in which he had said, "The greater the improvements in the analytical method the less lead was found, until none was found, in the volatile products." That was important, because it showed that the vapours from white lead did not contain lead. Years ago Mulder showed that acetic and formic acids were present in the vapours produced in the drying of linseed oil, and Mr. Reid (Journ. Soc. Chem. Ind., 1898 (17), 75) had recorded that there was considerable loss of weight through volatile products in the oxidation of linseed oil. Genthe (Zeits. fur. Chem., 1906 (19), 2,087) stated the volatile products formed in the drying process are equal to 15 per cent. of the weight of oil. In his second paper Professor Baly recorded that volatile products are produced by zinc oxide and basic sulphate of lead, though not at the same rate as is observed with white lead. The formation of volatile products during the drying of linseed oil has been long established, and could be easily seen by investigations as to the change of weight observed in the process of drying when it is found that the increase in weight by no means agrees with that demanded by the theoretical oxygen absorption. The observed increase is invariably much lower whilst volatile products can and are readily collected. Professor Baly also recommended the use of zinc oxide, basic sulphate without a drier, because he found that a drier increased the quantities of volatile products. The speaker asked members to imagine a shop in the Strand painted with zinc oxide without driers, and suggested that it would be a pleasing sight in a couple of days. It was necessary when considering such questions to bear in mind practical conditions, because, after all, paint was essentially an article for commercial application. Great stress had been laid on the French experiments, but he thought that while the report was interesting, if not also amusing, it could not be regarded as a serious contribution to science, and it had by no means killed the white lead industry. As Mr. Line had pointed out, experiments were therein recorded stating that the volatile compounds from white lead paint contained lead. Here, again, the speaker must protest against the author's methods in dealing with evidence. He was either not familiar with the French evidence, or for purposes of his own had omitted to mention that Professor Trillat, using his own reagent, was unable to find lead present in the vapours of paint, and, as previously stated, Professor Baly had corrected his earlier conclusions. The author had also gone astray with regard to the oxides of lead, and he had described massicot as litharge, showing that he did not distinguish between two very different products, which were prepared by different processes. With further reference to the array of figures, the speaker felt sure that those members who had been brought into contact with disputed cases realised how easy it was to get a certificate of lead poisoning, because of the difficulty of diagnosis. Medical men had within recent years progressed far towards a real understanding of lead poisoning, and this progress was particularly helpful to those whose interests lay in the handling and manufacture of lead products. This condition had not prevailed long, but the limitation of the present medical knowledge in this connection was now realised, and some very valuable work was in progress. Dr. Goadby had stated before the Pottery Commission that in a post-mortem he was unable to distinguish between alcoholism and lead poisoning unless he knew the history of the case. The history of the case often settled the disputed point. Dr. Goadby a month or two since gave a demonstration before the Physiological Society, taking as his subject the lethal effects of turpentine, and had shown that turpentine produces effects of such a character as to seriously complicate the whole question now under consideration. Mr. Line had dwelt upon the reduction of cases in Newcastle, and the Chairman had supplied the missing link in saying that what was possible at Newcastle was possible elsewhere, a suggestion which evidently had not occurred to Mr. Line. Mr. Line had also quoted certain figures given by Dr. Kaup for Prussia, but these figures represented 1904, before the regulations for painters were introduced. Mr.

Line, however, omitted to state that four years later, after the introduction of regulations, the total number of cases had fallen from 391 to 259, and the number of days of sickness from 12,246 to 6,211. This great reduction showed not only a decrease in the total number of cases, but a diminished intensity of the sickness. It was obvious that incomplete figures gave a distorted view of the real position. Lead poisoning could not be completely wiped out except by prohibition. It must remain a trade risk, but it had been shown that by the application of reasonable regulations it could be reduced to an ordinary trade risk. There was no necessity to make those regulations such as would harass the employer or employed. The Chairman had indicated that considerable loss of life took place in other occupations, and had instanced railway workers. The speaker might state in this connection that the Amalgamated Society of Railway Servants had issued certain figures showing that annually one shunter was killed in every 428, and that one in every 150 was injured, exclusive of railway accidents. In the opinion of the speaker there was little disposition on the part of many of those who claimed to be interested in the paint question to grapple with the real difficulties—they contented themselves with some few obvious truisms and many generalities. Such an attitude was fatal to progress, and only hampered those who desired to obtain a solution of the problem in a scientific manner. As an instance of oft-repeated half truths, one heard constantly that lead was blackened by sulphuretted hydrogen—true; but that zinc oxide was not affected—half a truth. Zinc is affected by sulphuretted hydrogen, but as there is no colour change it is not so obvious. The obvious blackening of lead was frequently quoted as a reason why lead should not be used in large cities; thus the effect of the most important agent of destruction—namely, sulphur dioxide, produced from the burning of coal—was ignored. The speaker quoted this as one instance of the present unsatisfactory state of affairs, and felt most strongly that the only solution of the problem would be the carrying out of a series of large scale trials on impartial lines. The American results were of doubtful value to England, owing to climatic differences, but indicated lines on which an English inquiry might be based. It would appear that in the future it will be necessary in considering the toxicity of paints to take into account the effects of the volatile products formed during drying, not only the linseed oil products, but products from volatile thinners used.

Mr. Noel Heaton said he would have liked to have heard some information about antidotes. He gathered from Mr. Klein's remarks that drinking dilute sulphuric acid had been shown to be useless, and he would like to know what was now considered the best practice as regard antidotes. He believed that some writers advocated potassium iodide, but he could not himself see how it could have any beneficial action.

Mr. Klein here interposed that milk was now the recognised antidote. It formed compounds with the lead which were insoluble. Some firms also used tablets of sodium sulphide, producing lead sulphide, which, although somewhat soluble in acid, soon established a state of equilibrium.

Mr. W. A. Humfrey spoke as a visitor and a white lead manufacturer. He said that there was no reason why the protection of the painter from lead poisoning should take the form of drastic or irksome rules and restrictions. Very simple precautions and regulations should be sufficient to accomplish a great improvement in health conditions. Prohibition was the most childish and foolish remedy imaginable. Surely, if the use of lead was necessary it was impossible to prohibit it, and if it was not necessary then the painter would not use it. In lead works casual employment particularly was objectionable, and the best records were of those works which could keep their men week in week out. The speaker appreciated the fact that this was a real difficulty in the painting industry, but thought it could be largely eliminated. He was certain that a vast improvement could be made in the health conditions of the painting trade if casual labour was reduced, and reasonable precautions taken and ordinary safeguards enforced and observed.

Mr. Line, in replying to the discussion, agreed with the President that it is ignorance that leads to white lead being used for decorative purposes in London, Sheffield, or Birmingham. Far from the figures quoted being so old as to be little guidance, he had carefully brought them up to date; and the more recent figures indicated no decrease of cases amongst painters, because they, as a class, were still exempt from the provisions of the Factory Acts. No doubt, however, the slight increase in the number of cases was partly due to increased trade activity. The lead worker's condition had been vastly improved as regards factory operatives, but

not as regards house-painters. His experience, supported by many others, was that toxic fumes are given off by white lead paint, but he had not dwelt at length on the evidence of Professor Baly, because that gentleman was about to issue a paper on that subject himself. (The paper was published in the *Journal of the Society of Chemical Industry*, June 15, 1912.) Medical testimony was said to agree that females carry lead in their system for many years. To say that lithopone is no substitute for white lead was incorrect, as everything depended upon the thinning materials and drier used. That is to say, lithopone must not be thinned with raw oil, like white lead, but with prepared drying paint oil and soluble cobalt drier, with very little turpentine, and some varnish in the final coat. Three coats of zinc oxide paint, suitably thinned, were sufficient for a durable protective coating, even in an ammonia and sulphuric acid works adjoining a gasworks, and his personal experience of the durability of water-paint on exterior exposed wall surfaces was that its superiority over white lead paint had been fully demonstrated. Lithopone had been used mixed with white lead, in about equal proportions; and, when suitably thinned, was satisfactory; also a mechanical mixture of lithopone and zinc oxide had been made into admirable paint, which proved durable, and did not discolour, after white lead paint had gone chalky, and turned almost black, when subjected to fumes from locomotive engines that were frequently standing in an adjoining railway cutting. It had been said that 7 grains of zinc oxide would kill a rabbit; that might be the case with intravenous injection, but if used externally it might save the animal's life. He would say that oleate of zinc had been found an excellent remedy for the skin. The subject, he felt, required thrashing out, but the essential point was that all concerned should be induced to acquaint themselves with the best methods of avoiding the evils to which so many workers were exposed. In reply to the question bearing upon the term zinc white, he, like Sir Thomas Oliver, had described zinc oxide as zinc white; it was so well known by that name that there was a tendency to fall into the use of the words. He had tested some so-called zinc white (procured by a Birmingham painter), and had found it to consist largely of barium and a little zinc sulphide, with some carbonate—he should judge whiting; there was no lead carbonate, as he had tested the material with sulphuretted hydrogen. He appreciated some of the remarks made by Mr. C. A. Klein, but did not feel free to express in public his opinion about the probable action of the Departmental Committee on the evils attending the use of lead compounds. He, like Mr. Klein, had been called as a witness. The alleged inaccuracies imputed to Sir Thomas Oliver in his report to the Bureau of Labour, Washington, and to the author in his paper, were the result of misunderstanding, as would appear on more careful reading of the published reports. He had not stated that lead was mined in a metallic condition, but that the lead ore that is mined is either galena (the sulphide) or cerussite (the carbonate). And he had pointed out that the high rate of mortality was attributable, amongst British lead miners, to gunpowder fumes, foul air in confined huts, and pulmonary affections, through exposure when fatigued and perspiring to the cold winds of our northern climate, rather than to the inhalation of lead sulphide dust. He considered that it was misrepresenting Professor Baly to make him say that he recommended the use of zinc oxide or basic lead sulphate without the use of a drier, instancing the condition of a shop in the Strand treated thus. Of course dust would rapidly settle upon the tacky paint. What Professor Baly did say was: (1) There was danger in any hydroxy compound being used; (2) it was desirable not to use white lead paint; (3) it was advisable, in any closed room, not to use driers on account of the oxidation process of the same, and the danger was reduced to a minimum with zinc white (the oxide) and basic sulphate of lead. But he (Mr. Line) had carefully avoided misrepresenting Professor Baly, when writing this paper, though he feared some of the speakers had inadvertently done so. (Quoting from a letter of Professor Baly, "I definitely stated that from the samples of white lead used by me, i.e., hydrated carbonate in oil, a certain amount of vapour was given off which exerted a powerful absorption of light, and that it also appeared that this emanation is poisonous.") The details of Dr. Kenneth Goadby's experiments on the solubility of lead with human gastric juice may be read in the *Journal of Hygiene*, Vol. IX., No. 1, April 1909, page 129. The same medical expert's experiments with white and red lead dust are described in the Report of the Departmental Committee on Lead in the Potting Trade, Vol. II., appendices, page 56, published by H.M. Home Office, London, in 1910. He had

made no pretension to being either a metallurgical or chemical expert, but he had not described massicot as litharge. And as to the suggested unreliability of the Home Office statistics of lead poisoning, because it was an easy matter to get a certificate from a medical man, the argument in no way weakens the case against lead. Doctors report only cases that they come across in their practice, if the sufferer has been working in a factory; not otherwise. But the mere fact that the Tariff Insurance Companies demand 50s. per cent. to cover the risk of claims under the Workmen's Compensation Act shows that house painters are exposed to the gravest risks. The reduction of the number of cases of lead poisoning in Newcastle is a credit to the white lead makers, but that does not indicate any means of lessening painters' dangers. It is by observing Factory Act rules that lead operatives are now less exposed to danger, but no such rules can be applied to painters, for the Factory Acts do not protect house painters. Mr. Line was thankful for the reminder that zinc sulphide (white) was formed by the action of the sulphurous fumes in the air of manufacturing towns, when oxide of zinc paint was exposed; but here, again, it is because suitable protective, prepared, drying paint-oils and varnishes have not been used as thinners as it should be (samples were produced). Dr. Klein's reference to the figures furnished by Dr. Edgar L. Collis demand notice. Whatever reduction in the number of cases of plumbism or of days of sickness have been reported since 1904, no such reduction applies to cases in the house-painting trade. But much that Dr. Klein had brought forward was valuable information. It was stated by Mr. Heaton that the analyst should have considered and described antidotes, but he (Mr. Line) had referred to preventive and curative treatment as within the scope of medical men, and he considered that medical examination is most desirable in the paint-making and painting trades. He also quite agreed with Dr. Klein's remark that milk is a good antidote, also cocoa, and that food should always be taken by all lead workers before commencing their day's labour. He was grateful to Mr. W. F. Reid for pointing out that lead was absorbed, like mercury, by admixture with the fatty secretions in the perspirations which are evolved through the pores of the skin. Mr. Reid rightly remarked that painters handle lead much more intimately than workers in lead factories do now under existing conditions; also that lead-oleate dust, due to rubbing down, causes danger to coach painters. He agreed with Mr. W. A. Humfrey's appeal to master painters, and those in a position to control painting, to limit the danger so far as possible. He also referred to the strong recommendation addressed by himself to the Paint and Varnish Society in the first section of his paper, to forestall the Report of the Departmental Committee on lead poisoning, by promptly approaching the members of the painting trade, in order that drastic action, in the nature of precautions, should be taken by painters generally, to minimise the terrible risks of lead poisoning.

On the motion of the chairman, a hearty vote of thanks was passed to the author, and the proceedings terminated.

THE BRITISH FIRE PREVENTION COMMITTEE.*

THE term "fire prevention" is, I am afraid, too often misunderstood, inasmuch as fire extinguishing or, rather, fire brigade work is what the majority has in its mind, and many Town Councils consider themselves well protected if they can boast of an efficiently-manned fire-engine establishment.

In reality, however, fire brigade work, as such, occupies but a secondary rôle in the several systems of fire protection, for really well-protected towns must owe their position in the first place to properly applied methods of fire prevention—namely, preventive legislation and a preventive practice based on the experience and research of architects, surveyors and engineers, fire brigade officers, insurance and municipal officials.

Fire protection, as generally understood during the last decade, is a combination of fire prevention, fire combatting, and fire research; and under the heading fire prevention all preventive measures are classed, including the education of the public.

Preventive measures may be the result of private initiative; but as a rule they are defined by local authorities and contained partly in Building Acts and partly in separate

codes supplemented, if necessary, by rules for the treatment of extraordinary risks, such as the storage of petroleum, the manufacture of explosives, or the performance of stage plays.

The work of the British Fire Prevention Committee relates in the first place to prevention pure and simple, and in the second place to research, whilst what is generally termed fire-combatting or fire-extinguishing only takes a third place in its sphere of activity. Mutual interest naturally brings the committee closely in touch with those who have the actual fire fighting to supervise—namely, the officers of professional, part-paid, volunteer, and private fire services, for just as no fire brigade officer who desires to keep up to date fails to carefully study questions of prevention, so does no municipal engineer, surveyor, &c., fail to become thoroughly conversant with the principles of fire-service work and equipment.

As fire brigade officers in different countries are banded together to discuss subjects relating to fire combatting and to exchange experience, so in England architects, engineers, district surveyors, municipal officers, and the members of the other technical professions interested have joined hands to deal with that part of the general subject of fire protection—namely, fire prevention—in which they are mainly interested. And just as the associations of fire brigades include frequently members of the technical professions who are interested in fire brigade work, either from an engineering, scientific, or some other point of view, so many of the superior professional fire brigade officers and many of the leading volunteer officers actively co-operate with the British Fire Prevention Committee, whose work not only so materially affects the fire hazard of the areas they attend, but, in fact, plays a very important rôle in the safety of public life, and the fireman's life in particular.

Thus I would put to you that if you in Russia, or those who have influence in other countries, can either constitute committees such as ours, or get your fire service societies to systematically develop the fire preventive side of fire protection, you will be benefiting your respective countries and your own technical and fire services. In order to give you some idea of how a committee like the British Fire Prevention Committee can be formed, I propose to give you some particulars of its formation and methods.

The Committee's Formation.—The British Fire Prevention Committee was formed by Mr. Edwin O. Sachs, F.R.S.Ed., after the Paris Charity Bazaar fire of May 1897 and the great Cripplegate fire in London of November 1897, on both of which cases it was obvious to the world that the subject of fire prevention was really in its infancy.

The committee was formed first as an ordinary private society, afterwards developed into an incorporated committee, and now has a membership of some four hundred professional men. The necessary funds for the ordinary secretarial work were raised by a regular annual subscription among the members, and by voluntary contributions of members primarily interested, and latterly regular subscriptions have been obtained from public authorities and others.

A council of influential members was formed, an executive, and also a number of sub-committees, and a small staff of assistants were engaged—namely, an assistant secretary, engineer, and clerk—as much of the work as possible being done by voluntary effort.

The objects of the committee are as follows:—

1. To direct attention to the urgent need for increased protection of life and property from fire by the adoption of preventive measures.
2. To use its influence in every direction towards minimising the possibilities and dangers of fire.
3. To bring together those scientifically interested in the subject of fire prevention.
4. To arrange periodical meetings for the discussion of practical questions bearing on the same.
5. To establish a reading-room, library, and collections for purposes of research, and for supplying recent and authentic information on the subject of fire prevention.
6. To publish from time to time papers specially prepared for the committee, together with records, extracts, and translations.
7. To undertake such independent investigations and tests of materials, methods, and appliances as may be considered advisable.

To what extent the committee has acted upon these objects it would be out of place for me to speak, though I may mention that good hard work has been done by all concerned in its organisation, and that by its popularity among well-educated and technical men, both at home and abroad, it

* A Paper by Mr. Horace S. Folker, F.A.I., Sutton, England, Member of the Executive of the International Fire Service Council, read before the International Fire Congress at St. Petersburg.

seems to have met with the favour of those who are interested in the subject in hand.

Testing Operations.—The tests which have been instituted by the British Fire Prevention Committee have been largely limited to obtaining reliable data on the exact fire resistance of various materials and systems of construction, or appliances used in actual building practice in Great Britain; in other words, they have been limited, so far, to obtaining results bearing on the every-day practice of the building world rather than to dealing with theoretical work.

The reason for these investigations is that sufficient data do not exist as to our methods of building construction, and that the little information available has, to a very considerable extent, been obtained by individual makers or manufacturers in their own laboratories, and that the results thus obtained have not been met with much confidence.

The few official tests that have so far been undertaken in the United States and in Germany have not, so far, been systematically organised, but have simply had the object, as a rule, of dealing with certain specific questions or a certain specific piece of material employed in a particular building rather than of treating the question of fire prevention as a whole.

The series of tests undertaken by the committee hence not only fills a long-felt want, but gives the fire prevention trades an opportunity of obtaining authentic records as to the reliability of their work.

Latterly the testing operations also include tests with fire appliances and with fire-resisting materials in popular use, such as textiles, but this is somewhat of a new departure.

The tests are of an entirely independent character, arranged on scientific lines, but with full consideration for the practical purpose in view. Absolute impartiality is assured, records being mostly taken automatically and by photograph, while the temperatures are carefully regulated and maintained, as the means for applying heat is by the combustion of gas.

All reports on tests solely state the bare facts and occurrences, with tables, diagrams, and illustrations, and on no account include expressions of opinion, nor should any phrase be read as a comparison or criticism.

The general arrangement and direction of the tests is in the hands of the Executive, and in accordance with certain principles laid down after careful study and experiment.

The actual tests are attended by the members of the Council and the members of the committee in rotation, care being taken that the attendance is always thoroughly representative of the technical professions primarily interested in the specific object under investigation.

The present testing station is near Regent's Park. The premises comprise an old villa residence and garden. The principal rooms are used for committee and reception rooms, a museum, laboratory and photographic dark-room, and a residence for a caretaker. The garden is occupied by the huts in which tests are conducted and the necessary plant.

With regard to the financial aspect of the station, the cost was met by special loans from individual members of the committee.

Tests with patented materials, makers' systems, &c., are subject to a scale of charges so regulated as to only just cover the actual cost. The testing station is also open to members for such private research work or tests as they may desire to undertake, at nominal charges for the loan of plant and instruments. The service of the members participating in the management of the station, conducting or attending tests, are given entirely gratuitously, and no out-of-pocket expenses are refunded. About £25,000 has been spent on the testing work, comprising some 200 tests spread over twelve years.

The Committee's Plant.—The plant actually completed comprises a set of testing huts, in which floors, partitions, doors or ceilings can be tested. The huts are laid down in two rows, and the materials used in their construction are stock bricks with lime mortar.

The fuel used is gas, produced on the spot by a generator. The gas is conveyed from the generator by pipes to the several huts, and the supply is regulated by valves and dampers; and as the gas enters the huts from the branch pipes it is diffused by means of mixing chambers of fire-brick.

Each hut has door openings, ventilation, and observation holes, the doors being closed by brickwork during a test, and the ventilation holes blocked according to requirements by fire-brick or fire-clay.

Each chamber for a floor test allows for the floor under investigation to be placed at least 8 feet above the floor of the

hut, and the chambers are roofed in with galvanised iron or tarpaulins when necessary.

Bricks of concrete blocks are used for any loads that may be applied to floors under investigation, and water is applied from an ordinary manual pump equipped with pressure gauge.

Records.—Temperature records are taken, as far as possible, automatically, by electrical pyrometers designed by Professor Roberts-Austen, of the Royal Mint, and are able to record temperatures up to 2,500 degs. Fahr.

Visual observations of work under investigation are also recorded, as far as possible, by photography.

Deflections are measured by level and staff or by weights and pulleys.

Attendance at Tests.—The general arrangement and direction of the tests, as already explained, are in the hands of the Executive, the work being done according to certain principles laid down by them after careful study.

Attendances at tests have to be strictly limited in accordance with the regulations of the testing station, for, quite irrespective of the fact that any crowding disturbs those directing the operations, and that the actual attendance is by no means free of danger, there is the question of vibration; for instance, the movements of people in the house are distinctly felt on such delicate instruments as pyrometers.

For the regulation of the attendance at tests, with due consideration for the representation of the committee—and also of the exhibitor, should it be the case of a patented piece of construction, system or appliance—detailed by-laws are in force.

Every test is in charge of a special sub-committee of the Executive, of whom one acts as the directing member. The complete technical direction is in their hands, and each member of the sub-committee wears a distinguishing badge when on duty.

For the execution of any one test the officers and employees of the committee take their instructions only from the directing member of the sub-committee in charge of that test, and are responsible to him for their due execution.

The Committee's Own Investigations.—Tests of fire resistance of the ordinary building materials or forms of construction which are not subject to any patent or the interest of any special maker, are undertaken from time to time according to the means at the disposal of the Executive for such purposes. It rests with the Executive, either of its own initiative, or at the instigation of others, to arrange for tests of this description, and it is hoped that the various public authorities interested in the subject will, in due course, contribute financially towards the cost of such experiments as they may consider of general public utility.

Up to the present the Executive has tested numerous floors of various construction, as well as many doors and partitions that are in common use. It is needless to say that there are endless questions relating to the fire resistance of ordinary forms of construction that have yet to be solved, and it is hoped that further research will be made in this direction as means permit.

The Executive hopes, in due course, to be able to record the exact resistance of all the more common methods of construction used in the British Isles.

Makers' Official Tests.—As already indicated, quite irrespective of the tests undertaken by the committee with work not subject to patents, or not the speciality of individual makers, the fireproofing trade also has every opportunity of obtaining official and independent reports on its systems or appliances at a fixed tariff.

Before any test with any materials, systems or appliances is started, or the arrangements for such a test are commenced, all contributions shall have been paid in advance, and the ordinary application for a test has to be supplemented by an undertaking on the part of the firm or individual desiring the test to accept all or any reports of the committee, framed on the lines indicated above, and further, to permit the Executive to issue such reports.

Reports.—In framing the reports issued by the committee, it is well again to emphasise the fact that every possible precaution is taken in wording them to avoid any semblance of opinion or comparison. They are drafted solely as a record of facts, and are intended to be read as such.

In the case of makers' tests, the exhibitor has an opportunity given him to put any grievance before the Executive prior to the issue of the report dealing with his individual test, any observations on his part receiving full consideration.

The reports are published at the direction of the Executive, and they are not only distributed among the

members of the committee, but among such non-members as is thought advisable, including the officials of the leading public offices.

In conclusion.—I have entered into detail as to the testing station, for I believe this feature of the committee's work specially claims attention in Russia. This has prevented me from even touching upon other spheres of the committee's work, such as its influence on question of technical legislation, its publication of interesting records of great fires, its collection of statistics and other data, its preparation of detailed reports on the fire protective organisation of other countries. Its work included a fire preventive campaign in connection with the recent Coronation celebrations, a great Congress in 1903, an International Fire Exhibition at Earl's Court, just to mention a few items.

The total accomplished is great, yet with greater funds a yet vaster field might easily have been covered.

I would now propose my resolutions:—

Resolutions:—

1. That the Congress deem it advisable that every civilised country have a society, committee, or institution having objects similar to, and doing work similar to that done by the British Fire Prevention Committee.

2. That such societies, committees, or institutions should be formed of members unconnected with any trade or industry concerned in fire-appliance or fire-resisting construction, and be duly incorporated with an unalterable proviso of this character.

3. That such societies, committees, or institutions, when rationally formed and representative of the technical professions primarily concerned, merit the regular substantial financial support of their respective governments, having regard to the great economy in the national wealth, and conservation of life and property that must result from fire preventive work systematically advocated and developed under the guidance of such bodies.

4. That the constitution of the testing station and successful work of the British Fire Prevention Committee should serve as a basis for the formation of similar societies, committees, or institutions, having regard to the eminently effective record of how the fire loss of England has materially decreased since the existence of the British Committee.

The above resolutions were unanimously adopted at the Congress, which comprised some 1,200 members representative of fifteen different countries.

COMPETITION NEWS.

DUNDEE.—The School Board have decided to invite competitive plans for a new school. The cost of the proposed building is estimated at £4,000.

EDINBURGH.—The Executive Committee of the Scottish National Memorial to King Edward VII., which is to be erected in the vicinity of Holyrood Palace, met in Edinburgh on Tuesday last, and approved the design submitted by Mr. George Washington Browne, R.S.A., Edinburgh. It will be remembered that seven Scottish architects were asked to compete, but that three declined the honour. Two others were appointed in their room, leaving six on the list. These were Mr. Hippolyte J. Blanc, R.S.A.; Mr. Washington Browne, R.S.A.; and Sir Robert Lorimer, R.S.A., all of Edinburgh; Mr. John J. Burnet, LL.D., F.R.I.B.A., and Mr. Henry E. Clifford, F.R.I.B.A., of Glasgow; and Mr. Robert J. Macbeth, Inverness. Shortly after his design was lodged Mr. Macbeth died suddenly. Seven designs were actually received, one of the competitors having lodged two sets of plans. Mr. Browne's design is briefly that of an enclosure of the courtyard in front of Holyrood Palace, with a stone gateway at the Canongate entrance and Doric colonnades at the south and north ends, that at the south to form a site for the monumental part of the memorial. The successful design has the approval of King George, who made certain suggestions with a view to improving it. The bronze group of King Edward receiving a wreath of laurel from Peace and Concord will be the work of Mr. Alfred H. Hodge, of London. The whole cost of the memorial is estimated at £15,000.

FLEET.—Mr. H. Percy Boulnois, M.Inst.C.E., &c., has presented his report as assessor to the Fleet Urban District Council on three competitive schemes for the drainage of the district. The scheme recommended for adoption is that prepared by Mr. T. J. Moss-Flower, C.E., of Westminster and Bristol, which is estimated to cost £29,732. The unsuccessful schemes were sent in by Mr. Mackenzie Richards and Messrs. Lemon & Blizzard.

GLASGOW.—The Corporation last week considered the general conditions, &c., for the competitive designs to be invited from outside architects for the proposed extension of the municipal buildings, a report of which appeared in our pages last week, Supplement, p. 18. After some discussion it was agreed to eliminate Clause 5, which reserved to the Corporation the right on the advice of Dr. J. J. Burnet, their assessor, to invite not more than three well-known architects who may not have submitted designs in the first competition to join in the final competition. Exception was likewise taken to a clause in the conditions which provides that if no instructions are given to the architect to proceed with the building within twelve months from the date of the assessor's award in the second competition, then the architect shall receive payment from the Corporation for his services in connection with the preparation of the competition drawings of a sum equal to 1½ per cent. of £150,000, the estimated cost. It was moved and seconded that the clause be sent back, in order that instead of making payment of £1,800 upon the estimated cost, a definite fee be fixed for services rendered. Mr. Carlton defended the minute. He pointed out that by the time they reached the stage when it was proposed to pay 1½ per cent. the architect would have done a great deal of work, and he was entitled by law to receive payment. The condition was set forth in the minute to make the terms of the competition perfectly clear to the profession. The Corporation was always willing to pay the labourer for his hire, and if they got so much work from the architect he did not think they would object to pay for what they received. Finally it was decided that, instead of paying a commission on the estimated cost of the building, they fix the sum of £500 as the amount payable to the architect in the event of the building not being proceeded with within twelve months.

MANCHESTER.—It has been decided to select the plans submitted by Mr. Alfred Rigby (of the firm of Messrs. Lowther & Rigby, of Hull and Manchester) for a proposed Roman Catholic Church to be erected at the corner of Richmond Grove and Plymouth Grove, Longsight. Three architects were invited to compete.

THE UNIVERSITY OF LIVERPOOL.

The examination lists of the Faculty of Arts School of Architecture have now been published.

Degree of B.Arch. (second examination).—S. H. Lakshminarasappa, A. R. Sykes.

Certificate in Architecture.—(The names in each class are in alphabetical order.)

First Class.—R. F. Dodd, S. A. Harper, S. S. Jones, S. H. Lakshminarasappa, A. R. Sykes, W. H. Thompson.

Second Class.—S. Faraday, G. N. Hill, S. P. Mehta, J. W. Rutledge.

The following awards are made:—The Holt Travelling Scholarship, W. H. Thompson; the Ravenhead Entrance Scholarship, F. Jenkins.

Students who obtain a first-class certificate are exempted from the intermediate examination of the R.I.B.A.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

John Thompson & Co. v. Thompson.

SIR,—From the report of this case given in your paper it would appear that we had employed no foreman on this work.

Will you kindly allow us to correct this, and to say that whilst we did not consider it right to saddle our client with the expense of a "walking" foreman, we had in charge of the work a trustworthy "working" foreman, such as we are accustomed to employ on work of this nature, whether contract or daywork, and in whom we have the utmost confidence?—We are, yours faithfully,

JOHN THOMPSON & CO.

43 Wood Street, Peterborough:

July 5, 1912.

The General Purposes Committee of the London County Council recommend "That applications be invited by public advertisement for the position of chief engineer of the Council and county surveyor for the administrative county of London at a salary of £22,000 a year, and that members of the staff be not precluded from making application for the position."

The Architect.

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FORTHCOMING EVENTS.

<i>Friday, July 19.</i>
Architectural Association : Exhibition of Work by Past Students in the Galleries at Tufton Street (closes July 27).
Architectural Association : First Annual Supper for Past and Present Students of the School of Architecture at Pagani's Restaurant, W., at 7.30 P.M.
<i>Saturday, July 20.</i>
Architectural Association : Visit to Chequers Burt, Missenden; Princes Risborough, and Ellesborough Church. Train leaves Paddington at 1.25 P.M.
<i>Monday, July 22.</i>
Cambrian Archaeological Association : Summer Meeting opens at Cardiff (five days).
<i>Tuesday, July 23.</i>
Royal Archaeological Institute : Summer Meeting opens at Northampton (nine days).
<i>Friday, July 26.</i>
Architectural Association Camera, Sketch, and Debate Club : Foreign Tour in Brittany (sixteen days).
<i>Saturday, July 27.</i>
Northern Architectural Association : Students' Sketching Club.

NEW HEAD OFFICES FOR PORT OF LONDON AUTHORITY.

THE design of Mr. T. Edwin Cooper, which has been selected and accepted in the important competition for the new Head Offices of the Port of London Authority, well merits the position it occupies, both in respect of its general disposition and lay-out of the site and as regards its detailed arrangement of plan. The site, ample in area and demanding the reservation of certain spaces for development as a building estate, was nevertheless not a very easy one with which to deal on account of the restricted frontage to Trinity Square and the awkward angle which this makes with the natural axial lines. It was obvious that for the best development of the spare land the Port of London building should have its main lines square with the natural axes of the land acquired by the Authority. On the other hand, the principal elevation should obviously face Trinity Square on a line at an angle closely approximating 45° with these, and the first problem that competitors had to solve was the reconciliation of these opposing desiderata.

In the final, as no doubt in the preliminary, stage of the competition, most of the participants in the struggle placed one or other of the obvious requirements in the forefront and made it a determining factor in the general conception of their plan. Mr. Cooper has solved the problem by the simple device of planning his building as a hollow square with its sides parallel to the natural axes of the site, and cutting off one corner of the square at an angle of 45° to give the obvious elevation to Trinity Square. A perfectly simple solution, like that of Columbus with the egg, when you are shown how to do it, but not one of the other five of the competitors in the final round has adopted it, and we must believe that these five submitted better plans than any of the numerous contributors to the first open stage of the competition. Two of these five make their axial lines north and south, parallel to those of the land, the other three north-west and south-east, governed by the elevation to Trinity Square.

Not only does Mr. Cooper's disposition satisfy the conflicting desiderata, but it gives for the principal façade, facing Trinity Square, a good opportunity for a different and more important treatment than the other four sides. Thus the columnar order, which a great public building always demands as an expression of dignity, is sufficiently and readily provided on the principal entrance façade, whilst the other elevations can receive an astylar treatment, far better suited for the effective lighting of a number of offices, many of them small private rooms for single officials. The building as arranged by Mr. Cooper has, therefore, its principal front to Trinity Square, its

eastern face to a widened Savage Gardens and its other elevations to new roads.

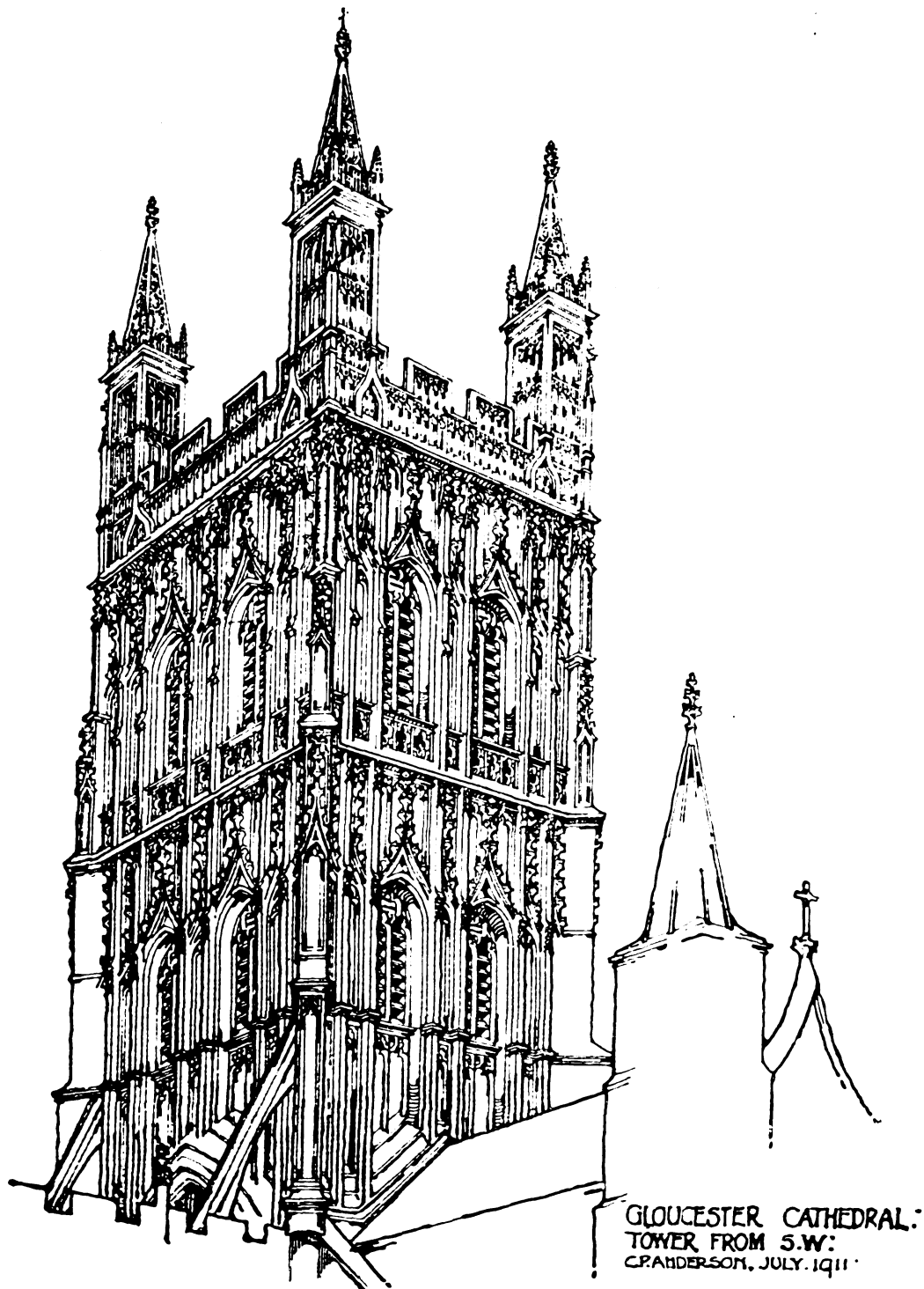
In the internal planning of the building arose a second problem for the competitors, the provision of very large rooms for clerks and public offices and of a large number of very small rooms for certain officials. Mr. Cooper's solution of this problem is to make the sides of his hollow square buildings 45 feet wide internal dimension, divided by a central corridor, lighted mainly by borrowed light. Then the large rooms can be made long and comparatively narrow, or on occasion when necessary the full width of 45 feet with light both sides. Herein comes the merit of the hollow square, the internal sides have splendid light for the internal square is large.

Most of the other competitors have their internal courts or areas so restricted that only corridors can be adequately lighted therefrom. Mr. Cooper places on the ground floor a circular hall for the Port Rates office, which complies with the suggestion of the competition particulars that a large hall should form a feature of the ground floor, and as it is of one storey only in height, on the upper floors the internal quadrangle gives a magnificent light to the rooms looking into it; indeed, the inner rooms will have a better light than those on the external fronts of the building.

Mr. Cooper's ground-floor plan may be thus summarised: on the south-east angular front a stately entrance hall or series of halls, on the north and west sides of the hollow square the Dock and Warehouse offices, on the east side the Chief Collector, on the south the Deposit office, and in the centre of the square the circular Port Rates office. No palatial grand staircase, but a sufficiently important and practicable staircase at each of the five angles. The whole plan has that unmistakable air of well-ordered simplicity which marks the skilful design thoroughly worked out to perfection, whilst most of the others suggest that their authors were tired of the job before they finished.

In external treatment Mr. Cooper has made his principal façade monumental by the use of a detached colonnade, three storeys high, on a rusticated ground floor with circular headed openings. The feature to be seen from the river suggested in the competition instructions is provided by a two-storey tower on a wide-spreading base, which is too obviously an extraneous feature, and has no satisfactory organic connection with the rest of the design. The remaining elevations follow the principal front with a rusticated ground floor, three storeys above, a cornice and an attic, rightly suggestive of an important block of offices.

A curious and mysterious affectation of secrecy is main-



FROM SKETCH SUBMITTED BY MR. C. PEAKE ANDERSON FOR PUGIN STUDENTSHIP, 1912.

tained at the River Office of the Port of London Authority with regard to the identity of the authors of the remaining five designs in the final stage of the competition. As the names of the whole six competitors have been widely announced it is not difficult to recognise the respective authorship by the draughtsmanship, but we will speak of the designs by their affixed numbers.

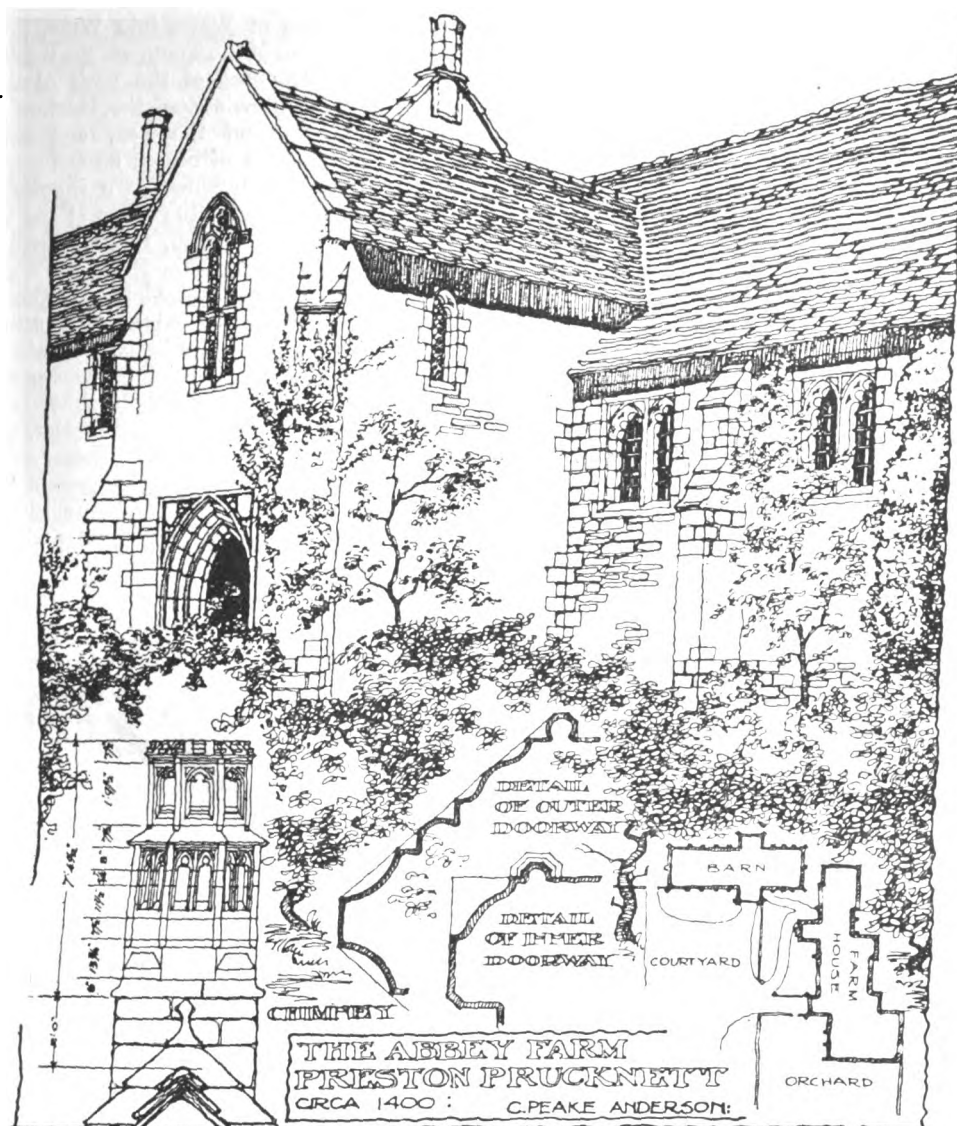
No. 2 has the building planned in rectangular form on the eastern side of the land, the front lining with Trinity House and the rear extending to Crutched Friars. A wide open space in front reduces the available building land to small dimensions. The feature of the plan is a great central hall, occupying in height the ground floor and three storeys above, treated in three bays with glazed domes over, and occupied as the Port Rates office. The corridors of the upper floors look into and are lighted from this great hall, which is a very fine conception. The entrance front is treated to a colonnade; the others are astylar, and a well-designed square tower is an important feature of the exterior, the author having thus

made the fine hall and a feature visible from the river, important elements of the design.

No. 3 adopts a fan-shaped disposition of the block, with a crescent road at the back and the main axial line passing through the centre of Trinity Square, to which the principal elevation faces. A feature of the plan is an oval hall on the main axis, approached by an imposing series of minor halls. As a practical solution of the problem the plan suffers from the defective lighting of many offices from narrow internal areas. Convenience has, in fact, been sacrificed to effect.

No. 4 has a rectangular block athwart Trinity Square, with the major axis lining to its centre. The entrance leads to a grand staircase hall and through to the Port Rates and Dock and Warehouses offices, which are combined, and have their practicable entrance from the rear.

No. 5 suggests a drastic remodelling of Trinity Square to fit a rectangular block which, like that of No. 2, lines with the front of Trinity House and extends back to Crutched Friars. Secondary entrances only are arranged



FROM SKETCH SUBMITTED BY MR. C. PEAKE ANDERSON FOR PUGIN STUDENTSHIP, 1912.

at the north and south ends, the main entrance being at the side, with a grand hall and staircase. A bold high tower is a well-designed feature of the front to Trinity Square, but cuts the elevation in two.

No. 6 most nearly approaches Mr. Cooper's plan, having a hollow square with central hall, but this latter is carried up to the second floor, and has accommodation over it on the third and fourth floors, instead of being in one storey only, as in Mr. Cooper's plan. The square block has its principal axes north-west and south-east, so that the lines of the plan are square with the front to Trinity Square. This plan has many irregular shaped rooms. We shall illustrate Mr. Cooper's design next week.

NOTES AND COMMENTS.

THE participation by their Majesties the King and Queen in the thanksgiving service held at Winchester on St. Swithun's Day, 819 years after the consecration, marks the completion of the renovation of the foundations of the cathedral under Mr. T. G. Jackson, R.A., and credit is due to the ability with which Dean Furneaux and the Chapter have raised the sum of £113,000 for the work that has been done. As we have said before, we do not admire the tactics by which the funds have been raised as a result of repeated frantic appeals for help

on the assurance, sometimes implied, sometimes explicit, that each would be the last. Still, the tactics have succeeded, and the present custodians of the cathedral have repaired the neglect of several generations of their predecessors. For the Dean and Chapter have been repeatedly warned, to our certain knowledge, for at least half a century, that something ought to be done to arrest the continued subsidence of the cathedral's foundations, and it was only when it became clear that something must be done to avoid imminent disaster that the recently completed works were commenced. As long ago as the thirteenth century serious settlements existed, and repairs were made to counteract them. Nor have the recent operations been carried out in the least costly manner. A rigorous examination of the whole cathedral and a comprehensive scheme prepared at the commencement would have made the fabric absolutely safe at far less cost.

We are not entire believers in the Greathead system of grouting. The Tube railways of London are supposed to be encased in a waterproof lining of cement by this means, but anyone may see the many evidences of penetrating damp that belie the supposition. Tons of cement and water have been pumped into the walls of Winchester Cathedral, but what has become of them nobody knows.

It is obvious that the fluidity of grout necessary to enable it to flow in a forced stream through an extensive ramification of internal fissures demands a considerable amount of water to be added to the cement. Assuming, for the moment, that the efficiency of the pumping machinery is sufficient to fill all the interstices with grout, the cement will set no doubt, but will Sir Francis Fox tell us what becomes of the water? It cannot solidify beyond the very small proportion used by the hydrated cement in crystallisation. It must either remain liquid, in which case the fissures are partly filled with crystallised cement and partly with water, or it must be absorbed by the stonework and leave vacuities after the cement has set. The latter hypothesis, knowing as we do the stone of which the Winchester Cathedral walls are built, is that we should favour. Yet, in face of such scientific certainty, the general public is asked to believe such inspired statements as that voiced by *The Guardian* in the following words: "By an adaptation of the powerful Greathead machine, used in the construction of the Tube railways, he (Mr. Fox) injected cement into loosened joints and fissures of the ancient walls, thereby transforming them in fact from jointed masonry into solid monoliths. Not the smallest crack or cavity was left unpenetrated, and the amount of cement thus used was enormous—in one corner of the north transept alone not less than forty tons were used. Now that the cement has practically hardened the walls into stone, and that the foundations on which they rest have been securely based upon the solid gravel underlying the original morass, it is hard to see what further risk can assail the building thus wonderfully preserved."

The assumption that the machine fills all interstices with grout will hardly commend itself to those architects and builders who have seen old mediæval walls in course of demolition. They know that there is a considerable displacement of the original stones and mortar. The latter has decayed and the former have slipped, and the fissures caused by subsidence are no longer continuous but blocked at intervals. Is it certain that the grout pumped into a fissure from its external opening will displace or pass these stoppages? and is it not more likely that it will fill part only of the interstices, even as grout, leaving still further voids when the cement sets and the water is absorbed by the stone? There is also the high probability that a considerable part of the forty tons of cement mentioned by *The Guardian* no longer remains in the walls but has run through a fissure or fissures extending to the base of the walls into the peat. It must be admitted that a large amount of cement has been pumped into the cathedral walls, and that it is doing service in holding masonry together, but to regard the walls as now being solid monoliths is absurd.

There is another possible danger in the filling of fissures in limestone walls with cement grout. The British standard specification for Portland cement permits the presence of sulphuric anhydride to the extent of 2.75 per cent., and many of our good modern cements actually contain about 2 per cent., some of it no doubt in combination. Therefore, when the cement sets the superfluous water is no longer pure water but a solution of sulphuric acid. What is this doing with the limestone of which Winchester Cathedral is built? Very serious trouble occurred at Winchester College in new buildings erected some years ago from the sulphuric acid percolating from concrete filling to vaulting. Can we be satisfied that the tons of sulphuric acid which have been pumped into the cathedral walls are doing no mischief?

Under the direction of Mr. W. T. Oldrieve, F.R.I.B.A., of His Majesty's Office of Works, the restoration of the roof of Glasgow Cathedral is making good progress, and very shortly the temporary ceiling will be removed and the new wooden vaulting of the choir and transepts will be exposed to view, showing the scheme of iconography that has been adopted in the

bosses carved in old oak from the former roof. In the choir roof the nine large bosses of the centre rib, along the crown of the vault, illustrate the Life of our Lord, beginning at the west end with the Nativity, and following in succession with the Baptism, Temptation, Transfiguration, Eucharist, Crucifixion, Resurrection, Ascension, and at the east end Christ in Glory. On the south side the bosses at the turn of the vault illustrate the miracles of Christ, beginning at the west end, the subjects being the Turning of Water into Wine, the Draught of Fishes, the Stilling of the Tempest, the Raising of Jairus's Daughter, the Opening of the Eyes of the Blind, the Raising of the Widow's Son, the Healing of the Multitude, the Walking on the Sea, and the Raising of Lazarus. The series of bosses on the north side of the centre rib are ornamented in a simpler manner with symbols beginning with the Dove at the west end, and proceeding with the Lamb, the Shepherd's Crook, the Chalice, the Spear, the Three Nails, the Scourge of Cords, the Crown of Thorns, and Alpha and Omega at the east end. At the wall head there is a further series of carvings. Over the eight wall shafts life-size angels bear the arms of the principal bishops of the See, beginning with St. Kentigern, and followed by Joceline, Bondington, the builder of this choir, Wishart, Blacader, who very probably decorated this ceiling. These are followed by Leighton, Macfarlane, and the present "bishop," Dr. Macadam Muir. Between these are shields with the arms of the Kings of Scotland, beginning with Malcolm and David at the east end, and followed by William the Lion and Robert the Bruce, James I. and James III., James IV. and Queen Victoria, Edward VII. and George V.

The vaults of the transepts have been decorated in a similar manner to those of the choir. The centre boss in the north transept bears the arms of Glasgow University, with, on the one side, those of the Faculty of Physicians and Surgeons, and on the other the Faculty of Procurators. At the wall-head on the east side are the arms of Iona, Culross, and Whithorn, while on the west are shields representing Dundee, Dunblane, and Dunfermline. In the south transept the arms of the Corporation occupy the central position, with on the one hand those of the Merchants' House and on the other the Trades House, while at the wallhead are the arms of Edinburgh, Melrose, St. Andrews, Paisley, Aberdeen, Ayr. The nave roof is not so far advanced towards completion, and the trusses are in course of erection for the actual roof, which has still to be constructed and covered, whilst the copper of the choir and transepts has by now lost its freshness and started to develop a green film.

GREAT AND LITTLE BOOKHAM.

(Concluded from last week.)

In Domesday Book Little Bookham is described as follows:

"The land of William de Braiose" Bocheham (Little Bookham). "Halsard holds of William Bocheham Godtovi held it of Earl Harold. It was then assessed for 5 hides, now for 3 hides. The land is for 3 ploughs. In demesne there is 1 and 3 villains and 4 bordars with 1 plough. There are 4 acres of meadow. From the pannage and herbage 11 hogs. In the time of King Edward and afterwards it was worth 50 shillings, now 60 shillings."

In an Inquisition taken on the death of Sir John Haunsard, 3 Edward I., 1275, it was found that he died seised of this manor, one part of which he held of the Earl of Gloucester by one-fourth of a Knight's fee, one part of William de Braose by a Knight's fee, and the remainder of the Abbot of Chertsey—value per annum £15.

Registers lost—1345-1366. 1415-1446. 1492-1500. 1616-1627.

Three virgates of land in the manor were held of the Abbot of Chertsey for 12d. annual rent and suit of court at Cobham and Great Bookham.

The church, about twenty minutes' walk through fields from Great Bookham, is an ancient edifice (name unknown) of stone and rubble in the Norman style, consisting of chancel and nave all under one roof, measuring 59 feet 3 inches by 17 feet 9 inches, with a small wooden belfry and low shingle spire, containing one bell.

The north and west walls of an early twelfth-century aisleless nave, to which a south aisle was added about the year 1160, are still standing, but the chancel which was contemporary with it was pulled down in the thirteenth century and replaced by another of the same width as the nave, the east wall of the nave being entirely removed. By the latter half of the fifteenth century the south aisle was perhaps in bad repair and was pulled down, the spaces between the columns of the arcade being walled up. A thirteenth-century window, no doubt from the old aisle, has been set in one bay of the blocking. At the south-east of the chancel is a piscina with two drains, probably of thirteenth-century date, over which is a four-centred cinquefoiled head with sunk tracery in the spandrels of the fifteenth century. At the south-west is a blocked window, which shows outside as a single light, with a trefoiled ogee head of fourteenth-century date. The groove for the glass and the holes for the window-bars remain in the reveals and soffit. (Victoria History.) In 1901 the church was enlarged by the addition of an organ chamber in the north aisle of the chancel; there are 130 sittings. The register dates from the year 1651. The living is a rectory, net income £330, with residence, in the gift of Henry C. Willock-Pollen, Esq., and held since 1905 by the Rev. John R. Edwards. There are charities of about £60 annual value. Mr. Morris gives the following particulars:—"It was apparently built in or about the middle of the twelfth century, and originally possessed a south aisle. This, however, was removed pro-

Ireland supreyme hedd, made by us Sir William Colwyngworth, person ther, John att Style and William Egeley, churche wardens ther, and John Scott, William Forster called the sydemen.

The Highe Alter

First one pickes of laten with a lynyne cloth of camericke to the same belonginge

Item one chaylyce of silver parcell gilte with patrone of parcell gilte to the same belonginge

Item iiij corporys caysys with kechers in theym

Item iiij sultar clothes

Item one cloth of whight saye to hange before a tabernacle of aleblaster

The other ornamentes

Item iiij vestementes with the appertenances and one olde cope

Item houselynge towell

Item iiij small towelles

Item a crosse of laten and gilte

Item crosse cloth of bokram

Item iiij bannerclothes of lynen clothe

Item one senser of laten

Item iiij candelstyckes of laten

Item vj crwettes of lede

Item crysemotorye of laten

Item sakeringe bell

Item hand bell



LITTLE BOOKHAM CHURCH.

bably late in the thirteenth century, though the old arcade (now blocked) is visible both inside and outside. There seems also to have been a small later chantry chapel on the north of the nave, to which the blocked arch (without capitals) remains. There is no chancel arch. The font is contemporary with the original church. The blocked fourteenth-century 'low-side' is visible on the outside, in the normal position." He also gives the date of the registers as from 1642—this is nine years earlier than that given in the county directory.

In that fascinating book of Mr. L. J. Jennings, "Field Paths and Green Lanes," he gives a description of how he came upon Little Bookham Church: "You see nothing of the church until you have actually opened the gate which leads to it. By the side, separated by a wall, is what is called the manor house, an ugly, but possibly very comfortable edifice. In the churchyard is a large old yew, protected by an iron railing 10 or 12 feet in height. The traces of Norman arches and capitals outside are very clear and good, and were only brought to light in 1864."

I may mention that this place (Little Bookham) is almost the centre of Surrey.

"Lytell Bokeham.—The ynventrye of all the ornamentes and gooddes belonginge to the parryshe of Lytell Bokeham made and taken ther by the commoundment of the Kinges Commissioners the X daie of March in the iiij yere of the reigne of our soveraigne Lorde Kinge Edwarde the vjth by the grace of God kinge of Englund Fraunce and Ireland defendour of the fayeth and in erth of the churche of Englund and

Item sepulcre clothe

Item coverlett of wollen

Item holye water pott of laten

Item ij belles in the stepull

Item ij surplyses

Item ij altar clothes upon alter in the body of the churche

Item herse clothe of lynen clothe paynted

Wylliam Colyngworthe, person there

Nicholas Leigh, William Saunder.

Bokham Parva.—Wardens, Thomas Fraunces, Richard Rogers. Deliverid unto the churchwardens ther the xvij day of May anno regni regis Edwardi Sexti septimo by Sir Thomas Carwarden knight Nicholas Leigh and William Saunder esquiers comysioners of our soveraign lord the king among other to that effect these parcelles of churche goodes here after ensuing.

Imprimis a chalice poiz xij oz.

Item a white aulter cloth of say for the Communion table. Also remaining in their charge to the kinges use ij belles in the steple hand bell and sacring bell. (Then follow two signatures which I fail to decipher.)

Sales.

One coverlett sold for xvjd 1.4

One painted cloth sold for xvjd 1.5

Brasse and latten poiz xxlb iijs iiijd 3.4

All the rest of the ornamentes sold for iiij^s viij^d 4.8

Summa X^s IXd 10.9

In his most interesting work on the "Forests of Surrey" the Rev. J. Charles Cox says: "Surrey was from early days one of the best wooded districts in the whole of England. The woods were so dense in the south of the county and in the valleys of the centre that the early settlers could effect no permanent lodgment until they had felled the trees and made a clearing. Woodland is entered in fully three-fourths of the manors enumerated in the Surrey survey. The survey takes little account of the Surrey strip of the Weald, there were but few manors on it, and it was mostly uninhabited forest." And he goes on to say: "As every lover of Surrey well knows, the chief woodland tract of the county is the Weald, which extends all along the southern fringe of the county. Here the soil always has been, and still is favourable to the growth of oaks, and you may also notice how the oak trees, many of fine growth, form the usual hedgerow timber of the whole of this district, and also flank the roads and by-roads. During the seventeenth and eighteenth centuries large drafts of oak were taken for shipbuilding purposes of our Navy." We read in George Clinch's work on "Bygone Surrey" that timber was supplied from Bookham (Bookham) for the building of Nonsuch Palace, Cheam.

Let me try to describe the common, and this is almost an impossibility, as each nook, glade, drive, pond, and even ditch is entitled to have something said in favour of its beauties. This beautiful and magnificent common stretches from Slyfield on the north, Leatherhead on the east, and Effingham on the west and south-west, abounding in scenery that is one of the fascinating features of our county. The trees—monarchs some of them—are in their splendour now, showing all the beautiful colours of new growth—oaks, hollies, birch, hazel, sycamore, larch, spanish-chestnut, and many others; and add to these the undergrowth, the bracken growing in profusion, bramble everywhere, the fruit of which is the delight of the children in the late summer and early autumn; and it is here we may wander in woody glades of great beauty. Oaks are the most numerous of the trees, and it is curious to note how large a number of them have their boles grouped about by free-growing hollies, while many of the smaller trees and shrubs are festooned with honeysuckle in lovely profusion. This is what it is now; but in the days gone by it must have been an impenetrable forest, with swamps, marsh and bogs; and where the hogs mentioned in Domesday Book were fattened or made lean upon acorns whose descendants flourish on Bookham Common to-day. Here the cottagers had common rights—as elsewhere—and one of the inhabitants informed me that a "round up" of cattle had occurred in his time, notice being given by the bailiff that on a certain day the drive would be made. This being done, the owners had to claim their cattle, and those not claimed were sent into Guildford, and after three days were sold in the open market, the money being sent to the lord of the manor.

Mr. Charles V. O'Neil, writing in the "Home Counties Magazine" (March 1911), on "Some Old Surrey Roads," says:—"One often hears it said that according to English law and tradition 'once a highway always a highway.' There are, of course, many exceptions to this rule or law, whichever it may be. In Surrey, for instance, the ancient track from Ockley, on the Stane Street, through Parkgate and Newdigate to Gatton, every trace of which has vanished, and equally of course any thoroughfare may be closed by means of the necessary legal process, though such changes are not frequent, except perhaps in the neighbourhood of large towns. In rural districts it is seldom worth while to close an old track, and they have been allowed to revert more or less to a state of nature, and these derelict roads are among the most charming features of the district. And here in this district you have some of these abandoned roads; you have no doubt noticed that this village lies off the main road to Guildford, and yet the older lane to the north of the present highway is still intact, and still carries the bulk of the local traffic. To the east of this village, and about three miles off as the crow flies, high up on Mickleham Downs, there is a broad green tract, and this shows evidence of Roman work, and it is marked on the Ordnance map as Ermynt Street. In dealing with the roads we must bear in mind the state they were in the time of our forebears; in a great many instances they were only tracks, made by the foot traveller and the pack horse. The great central road on the chalk was from east to west, and the roads which came across the north-west and north-east corners of the county, from Hampshire and Kent respectively, were also used; and, as one writer puts it, the roads were in a 'villanously bad condition.' Malden mentions in his 'History of Surrey' 'that when the Roman roads were in

good repair, Surrey, south of the chalk, was more accessible than it was in the first half of the last century. In winter or in any wet weather they were literally impassable; in the deep sand-lanes, between high banks, divergence was impossible, and the rains scoured the warp into deep and shelving trenches impracticable for wheels.' "

Defoe mentions that as late as his time it sometimes took over a year to convey an oak from the Weald to Deptford. But however impassable the Weald may have been, there were substantial farmers in it, or men who made money by iron and farming combined. The old houses, manor-houses, and others, now farms, are built of magnificent oak timbers, and though wood was cheap it implied a flourishing middle-class population. It was in 1818 or 1819 that Mr. John Macadam introduced his system of road-making, the result being a fine hard surface, and when kept in proper order and repair they are a pleasure to walk on; but if you wish to take a country walk you must not take the high road, but find one of those abandoned roads, and then perhaps you will be clear of the hooting, bellowing, screaming, and shrieking motor, which in the summer smotheres you and everything else in dust, and in the winter mud.

On one occasion in the autumn of 1898 the clock in the church tower started striking nominally the hour of ten at night; but it did not stop when it had duly tolled out the requisite number, but went on and on, till at last the parish clerk went to the rescue by wedging a broomstick in its works. It struck over one hundred times.

They had a quaint custom here, by placing or hoisting a broom in the chimney of the house when the wife went away from home for a time, and left the husband to look after himself. The redemption was usually paid for in "beer" money, but this custom is rapidly dying out. I have been in the village and seen the broom displayed, and knew the man on whose chimney it had been hoisted, but I am unable to say what he had to pay before it was removed.

Some of the Surrey expressions are rather quaint. For instance, "How be you?" is the morning's greeting, to which "I be pretty middlin', thank ye," is the usual answer. The word "throw" is also used in a peculiar sense of being sold or disappointed in a bargain—"I got 'throwed' over that job."

A Surrey labourer's meals are his breakfast, his beer or eleven o'clock meal, his lunch the mid-day meal, his bait or four o'clock meal in hay and harvest time, and his supper—five meals in all.

But I cannot bring this paper to a conclusion without tendering my thanks to my two brothers and my friends who so kindly gave me information; and I am indebted to Mrs. Quartermain for her kindness in allowing me to use her late husband's notes on Bookham Church, and also to the Rev. J. Charles Cox, M.A., and E. H. Sharp, Esq., B.C.L., M.A., who so generously gave me permission to take any extracts I required from their respective works. My other authorities have been the Surrey Archaeological Records; also the following:—Black's "Guide"; "Field Paths and Green Lanes," 1844, L. J. Jennings; "The Surrey Tourist," 1884; "Memorials of Old Surrey," Rev. J. Charles Cox, M.A.; "Highways and Byways," Eric Parker; "Names and Their Histories," Taylor; "Bygone Surrey," Clinch; Kelly's Directory, 1910; "Home Counties Magazine"; "Surrey Churches," Morris; "Short Account of Great Bookham Church," Sharp; Brayley's "Surrey"; Manning and Bray; and Victoria "History of Surrey," Vol. III.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

I.—GENERAL CHARACTERISTICS.

It was only a little more than half a century ago that the ecclesiastical architecture of Italy began to be studied. Thomas Hope, in his "History of Architecture," while giving great attention to Italian buildings, dealt mainly with history, and but little with æsthetics. Of Professor Willis the same might be said, and though the illustrations in the books of both these authors were not so complete as might have been wished, their works remained for some time standard authorities, as people became familiarised with many of the most remarkable of the buildings to which they referred, by means of photographs, the value of which

can hardly be overestimated as far as regards the rendering of form without colour.

The works of Hope and Willis were followed by Ruskin's "Stones of Venice," which was the first attempt to claim all that it deserves for Italian architecture, but whose only fault, perhaps, is the rather depreciatory way in which our own Gothic buildings are spoken of in comparison with those in which he was more especially interested. It is true that Ruskin nominally confined himself to Venice, but his pages are full of instruction in regard to the architecture of the Mainland, whilst they opened up a mine of suggestive teaching, which, there can be no doubt, did much service to architecture and the arts ancillary to it, and which only required to be followed out in the same thoughtful way to effect good everywhere without any alloy. Pugin had drawn attention to our old English buildings in the historical spirit. Ruskin approached Gothic architecture from the æsthetic and philosophical side in his "Seven Lamps of Architecture," and the book to which allusion has just been made, with his extension of the fields of precedents south of the Alps, his placement of Pisan Romanesque, Florentine of Giotto's time, and Venetian by the side of English Decorated Gothic, as fit for adoption in this country, effected quite a revolution in our ecclesiastical architecture. His knowledge, study, mastery of language, and expression, and his skill in drawing, have left a deep mark upon the history of the English Gothic revival. Sixty years ago architectural design was little better than the compilation and recombination of the *dissecta membra* of mediæval buildings. Few remembered the noble brick architecture of Flanders, and but few that of Lombardy and Venetia, and in default of the costly and almost unattainable hewn stone from Caen or Portland, churches were built of the rudest Kentish rag, laid in random courses, and pointed, probably, with black mortar. It was in All Saints, Margaret Street, designed by Butterfield in 1849, that the first step forward was made in that bolder style of design which was to open so hopeful a future for English church architecture. Whether this church was influenced by the theories enunciated in "The Seven Lamps of Architecture" the writer will not undertake to say, but that it revealed a tendency to depart from ancient insular precedent in many important particulars is very certain. Then in 1855 and 1856 there appeared respectively from the pens of George Edmund Street and James Fergusson "Brick and Marble in the Middle Ages: Notes of a Tour in the North of Italy" and "The Illustrated Handbook of Architecture." Each was a publication of no ordinary importance and interest, for it filled up a void in our literature which previous volumes on the subject of architecture had never before precisely attempted; and, moreover, it filled it up with learning and ability.

As a useful and important contribution to architectural literature, Street's volume (of which a second edition appeared twenty years later) was heartily welcomed. It is true that the ground traversed by the distinguished architect was neither new nor unexplored, but proceeding, as it did, from the pen of an ecclesiologist, and not from that of a mere antiquary, Street's book placed the subject of Italian Gothic in an entirely new light; while, in his perfect mastery of the pencil, the author had an untold advantage over non-professional writers, and the very beautiful, numerous, and well-selected illustrations with which the volume was enriched did much to familiarise the untravelled with the chief beauties and characteristics of trans-Alpine church architecture.

It is hardly necessary to remind the reader that Street was an enthusiastic and uncompromising admirer of the Pointed styles, whether English, French, German, Italian, or Spanish, or that for years he was in the van of the revivalists. Like his distinguished compeer, Sir Gilbert Scott, he laboured with his pen as with his pencil to support the cause which he had at heart; and if the fashion of ecclesiastical architecture and art has undergone a vast change since his day, it was subject to a like mutability in the Middle Ages:—

"Credette Cimabue, nella pittura
Tener lo campo, ed ora ha Giotto il grido."

In the "Brick and Marble" of North Italy, Street boldly avowed his tastes, and by some of his critics was called to account for echoing Ruskin's denunciations of the Renaissance. It is fair to Street, however, to say that, in his preface, he expressed clearly and temperately what it was he went to Italy to study, and why he purposely neglected, in favour of the less-known Pointed remains, the more familiar

works of Alberti, Brunelleschi, Bramante, Palladio, and others of the Revived Classical school.

In his "Handbook of Architecture" Fergusson amply manifested that his knowledge of the Gothic was no less extensive than that of the other styles, and his two volumes, published in 1856, with their magnificent apparatus of 850 woodcuts, comprising plans, sections, elevations, perspectives, and details—nearly all of them engraved expressly for the book, and each with rigorous honesty telling on its face the authority from which it was derived—form a treatise singularly concise and singularly full of matter, fair in its statements, moderate in its polemics, always ingenious, often true in its theories; in a word, altogether a contribution of the first value to the architectural literature of England. Fergusson's pages on the various epochs of Italian church architecture are by no means the least fascinating portion of this most fascinating book.

An exceedingly useful and pleasantly written pioneer volume was "Sketches of Continental Ecclesiology, or Church Notes in Belgium, Germany, and Italy," by the Rev. Benjamin Webb, so well known as one of the founders, in 1839, of the Cambridge Camden (afterwards styled the Ecclesiological) Society, and from 1862 to 1885 Vicar of St. Andrew's, Wells Street, where, under the superintendence of his life-long friend George Edmund Street, he carried out many architectural and ritual improvements. Published in 1848, this work was not merely architectural; it was ecclesiological in its widest sense. Services, music, religious pictures, epitaphs, vestments—those of altars particularly—roods, altar-plate, metal-work of all kinds, and stained glass were discussed in it; and very interesting pictures of popular religion were liberally and pleasantly interspersed.

Undoubtedly the architectural value of Mr. Webb's "Continental Ecclesiology" arose from its detailed account of Italian Pointed architecture. A friend, a pet of the author's, he perhaps set too high a value upon it as a work of art, exclusive of association and antiquity. In perusing Mr. Webb's pages one would feel sure that this erudite ecclesiologist would have visited a sham west front to any cathedral in England with far other than the gentle blame he attached to it in Italy.

Since the publication of the volumes of which some account has been given, our literature on the church architecture of Italy has been copiously enriched with works from the pens of professional and lay-writers too numerous to specify. Suffice it to say that each in its own particular way throws new light upon the architecture of a country which fascinates the more ardently it is studied, view it from what standpoint we will; and if much of the Pointed Gothic work cannot be held up for our imitation, the most critical can hardly fail to bring away with them many a hint of value.

One of the most important cautions which the student of mediæval architecture should impose upon himself, on first visiting Italy, is to guard carefully against being too much carried away by the reaction against former prejudice. The lover of Pointed architecture frequently visits Italy late, and almost always under the impression that it contains little that is exactly in his line; and when, so far from this impression being confirmed, he finds that it is absolutely filled with objects of the deepest interest to him, he is apt to fly at once to the opposite extreme, and to be so much enamoured of these newly discovered beauties as to think them superior to those of the works on which his former ideas and knowledge had been founded.

This is a great mistake. Were it even true that the Pointed architecture of Italy were superior to our own, it would be unwise to in any degree substitute it for that which is pre-eminently our national form of architecture, and which has on that ground (as well as so many others) such special claims to be made the basis of future developments. Such, however, is far from being the case. Italian Pointed, though replete with beauty, is *per se* very inferior as an architectural style to the contemporary architecture of England and especially of France. Its details are so mixed with reminiscences of Classical antiquity, and its construction falls so far short of carrying out fully the great principles of Pointed architecture, that it must ever be considered as a far less perfect development of the style than those of Northern Europe.

These facts, however, once admitted, Italian Pointed may be studied with great advantage, and will be found to supply a vast fund of material which may be used to enrich and render more copious and complete that which we derive from our northern examples, and which may be imported into our own style without unduly infringing upon its nationality.

How tactfully this may be done was shown some sixty years ago, when the foreign Gothic mania was at its height, by Sir Gilbert Scott in one of the most beautiful churches raised in the vicinity of the Metropolis—St. Mary's, Stoke Newington—and perhaps in a more pronounced degree by Mr. Bodley in St. Michael's, Brighton, and St. Martin's, Scarborough; and by Messrs. Pearson and Street in St. Peter's, Vauxhall, and St. James the Less, Westminster. Unfortunately for our ecclesiastical architecture of the mid-Victorian epoch, there was no end to the oddities introduced by men not drilled by the study of ancient work. We had sad travesties of Butterfield and Street; architecture so French that a Frenchman would not know it, out-Heroding Herod himself; Byzantine and Italian in all forms but those used by the Byzantines and the Italians; mixtures of all or some of these; "original" varieties founded upon knowledge of old styles, or upon ignorance of them, as the case might be; violent strainings after a something very strange, and great successes in producing something very weak; attempts at beauty resulting in ugliness, and attempts at ugliness attended with unhoped for success. All these gave a wild absurdity to much of the architecture produced during the epoch alluded to, which it is impossible not to deplore; but at the same time it must be allowed that much of the best, the most nervous and the most original results of the English Gothic Revival were arrived at within the same period, as, for example, in that imposing group of churches built in the north-eastern district of the Metropolis from the designs of the late Mr. James Brooks—St. Michael's, Shoreditch, St. Saviour's, Hoxton, and St. Columba's and St. Chad's, Haggerston—districts which few amateurs or *dilettanti* would ever think of exploring in search of architectural beauty. In all these churches, like those of his contemporary, William Butterfield, the architect, by an utter absence of conventionality in the treatment of features which had become stereotyped, a studied simplicity of details which were elsewhere elaborated, and a tendency to abnormal outlines and unusual subdivision of parts, managed to attain originality without condescending to extravagance, and to secure for his works a quiet grace in which there may seem to some minds less of elegance than of dignity.

The difficulty of compressing such a subject as the characteristics of Central Italian church architecture within reasonable limits is so great that, except here and there, all references to the evidences of development from earlier buildings, of which most architecture affords examples, must be avoided; and, taking the reader to the buildings themselves, it will be the endeavour of the writer to convey a general idea of their character by a description of their more prominent features.

(To be continued.)

ILLUSTRATIONS.

HOUSE FOR G. J. BENNETT, ESQ., LINCOLN.

THIS house was built on the outskirts of Lincoln in 1909 by Messrs. W. Wright & Son. Thin local red bricks were used, with sandbrick arches and quoins, Ancaster freestone band and keystones and Ancaster weather-bed sills and copings. The house is covered with Elterwater green slates. The aspect is south.

HOUSE FOR CYRIL NELSON, ESQ., LINCOLN.

THIS house is built of thin local red bricks and covered with Elterwater green slates. The general aspect is south. It was erected in 1909 by Messrs. W. Wright & Son, of Lincoln.

HOUSE FOR G. E. SILLS, ESQ., LINCOLN.

THIS house is built of thin local red bricks and covered with Old Delabole slates. It has been built in a disused quarry, the land sloping gently away towards the south, in which direction the principal living-rooms look. A feature of the house is the hall, two views of which are shown, and the internal fittings of which are in selected red deal. The general arrangement lent itself to a forecourt on the eastern or entrance side, a feature that works in well with the scheme of this house. Messrs. M. Otter & Co., of Lincoln, were the builders.

HOUSE FOR HENRY G. GAMBLE, A.R.I.B.A., LINCOLN.

MR. GAMBLE'S own house was built in 1906 by Messrs. W. Wright & Son. The lower part is of thin local red bricks, the upper part pebble dashed, and the roof covered with

"Rosemary tiles." It also faces the sunshine. The internal fittings of the hall are in selected red deal.

ALTAR RAILS AND MONUMENT, LINCOLN CATHEDRAL.

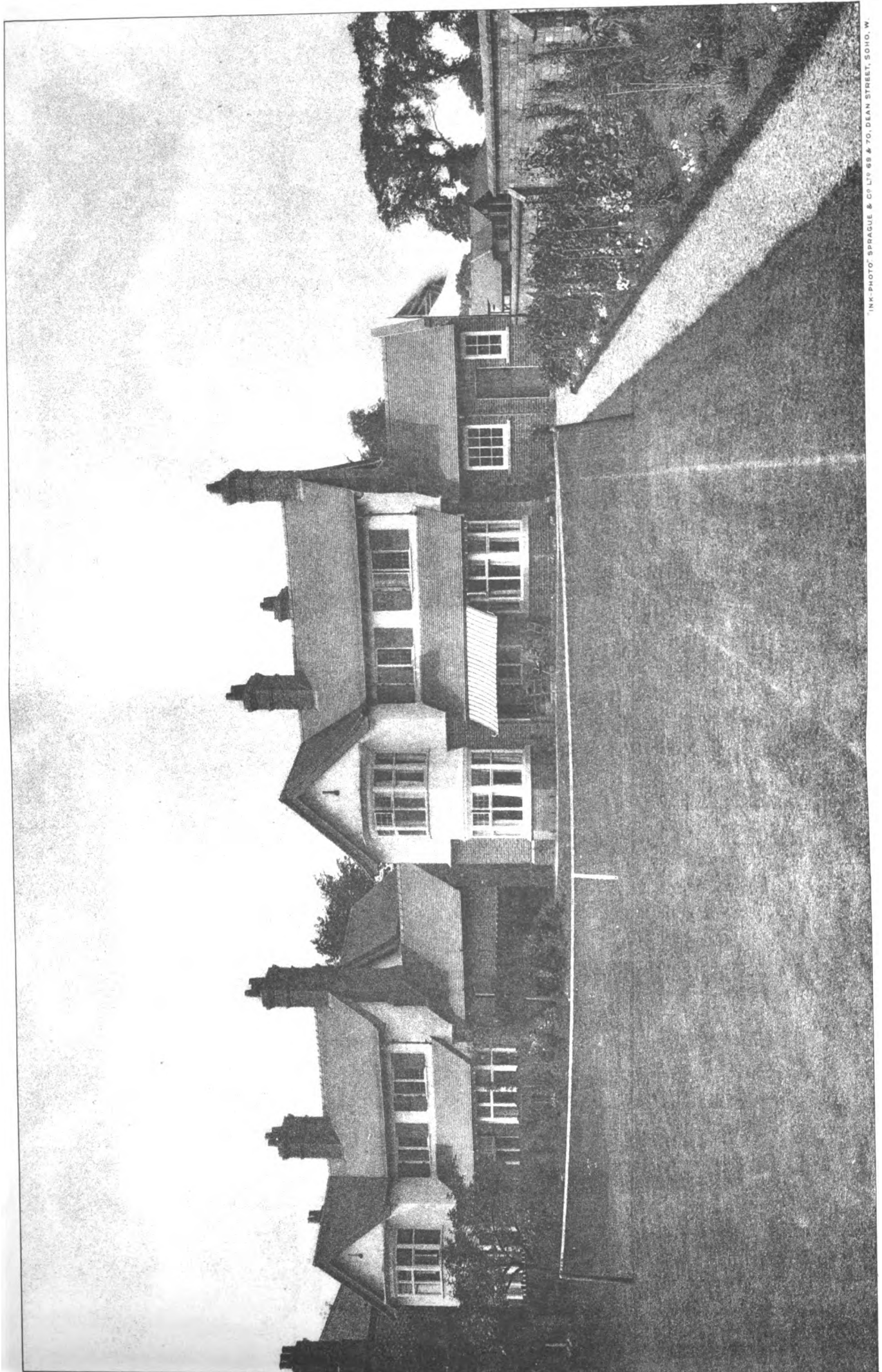
THE altar rails and monument in Lincoln Cathedral have been made by Messrs. Bowman & Sons, of Stamford. They have been erected by the family to the memory of the Rev. Jacob Clements, formerly Sub-Dean of Lincoln, and to Mrs. Clements and their son, General Clements, and their



daughter. The altar rails are in Austrian oak fumed and wax polished, and the monument is in unpolished Hopton Wood stone.

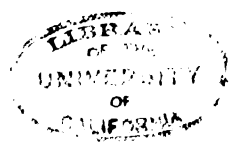
All the works have been carried out to the designs and under the supervision of Messrs. Scorer & Gamble. The photographs of the altar rails and the monument are by Smith, of Lincoln, and all the others by Harrison, of Lincoln.

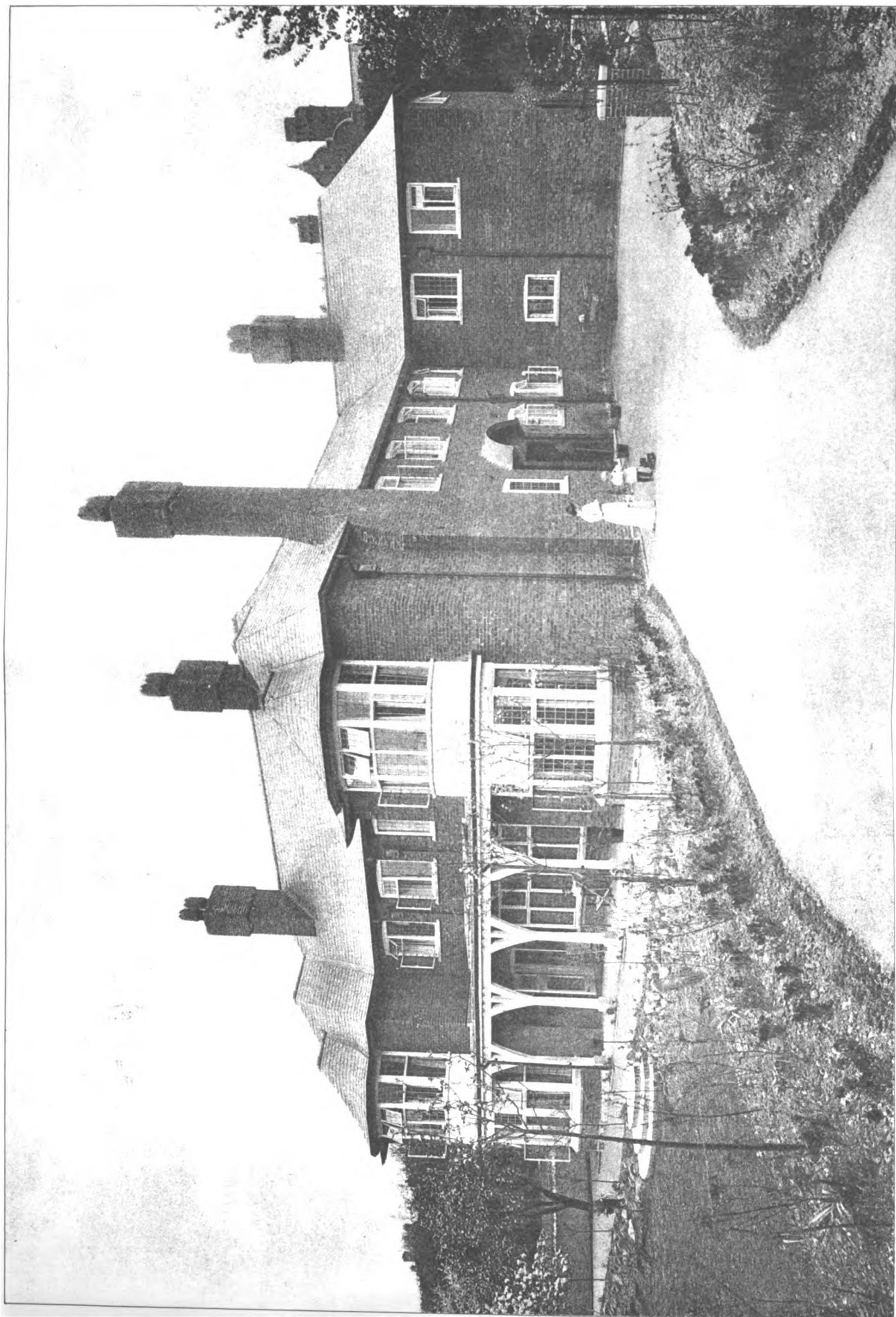
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MR. GAMBLE'S HOUSE, LINCOLN.
Messrs. SCORER & GAMBLE, Architects.

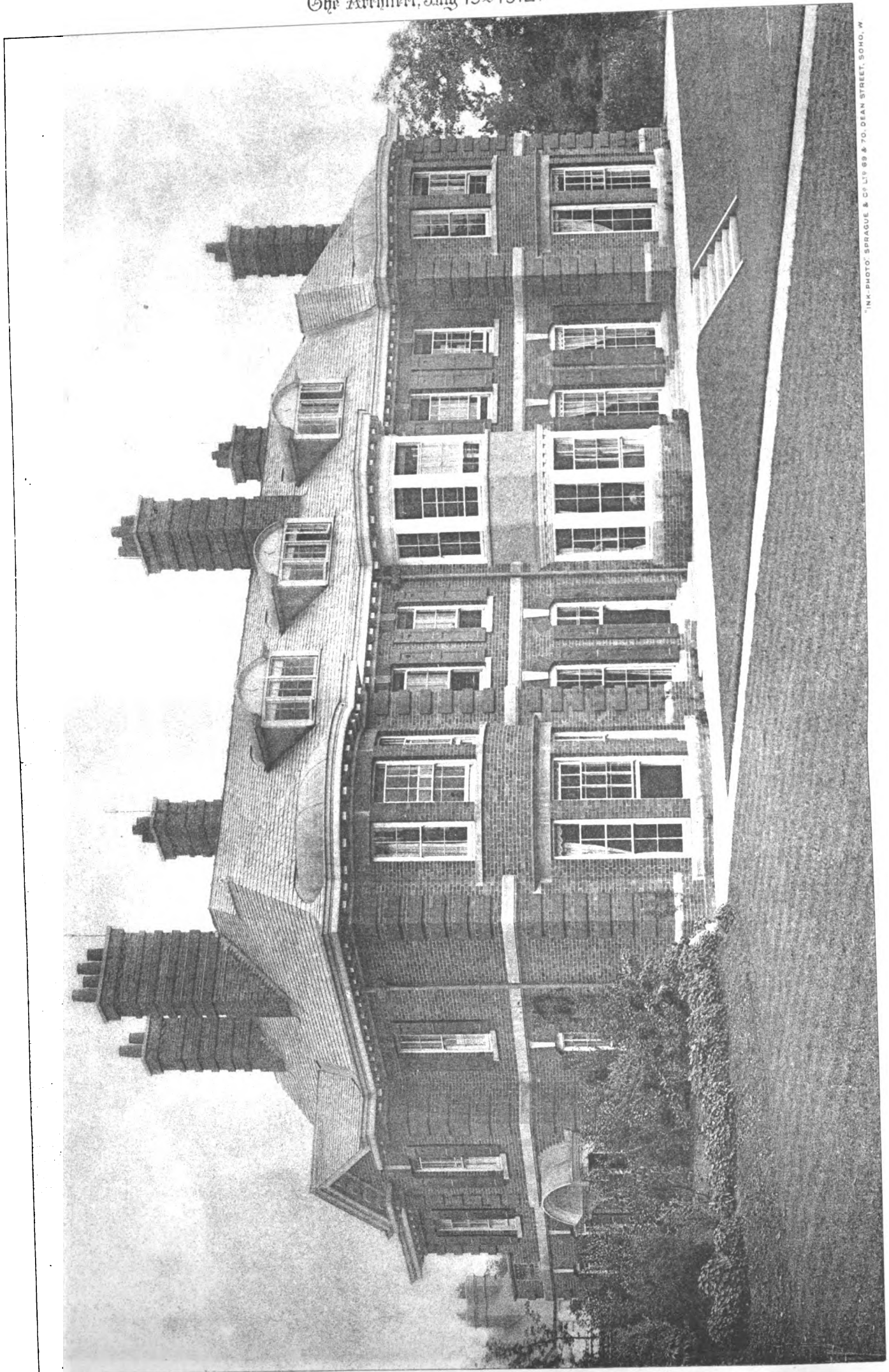




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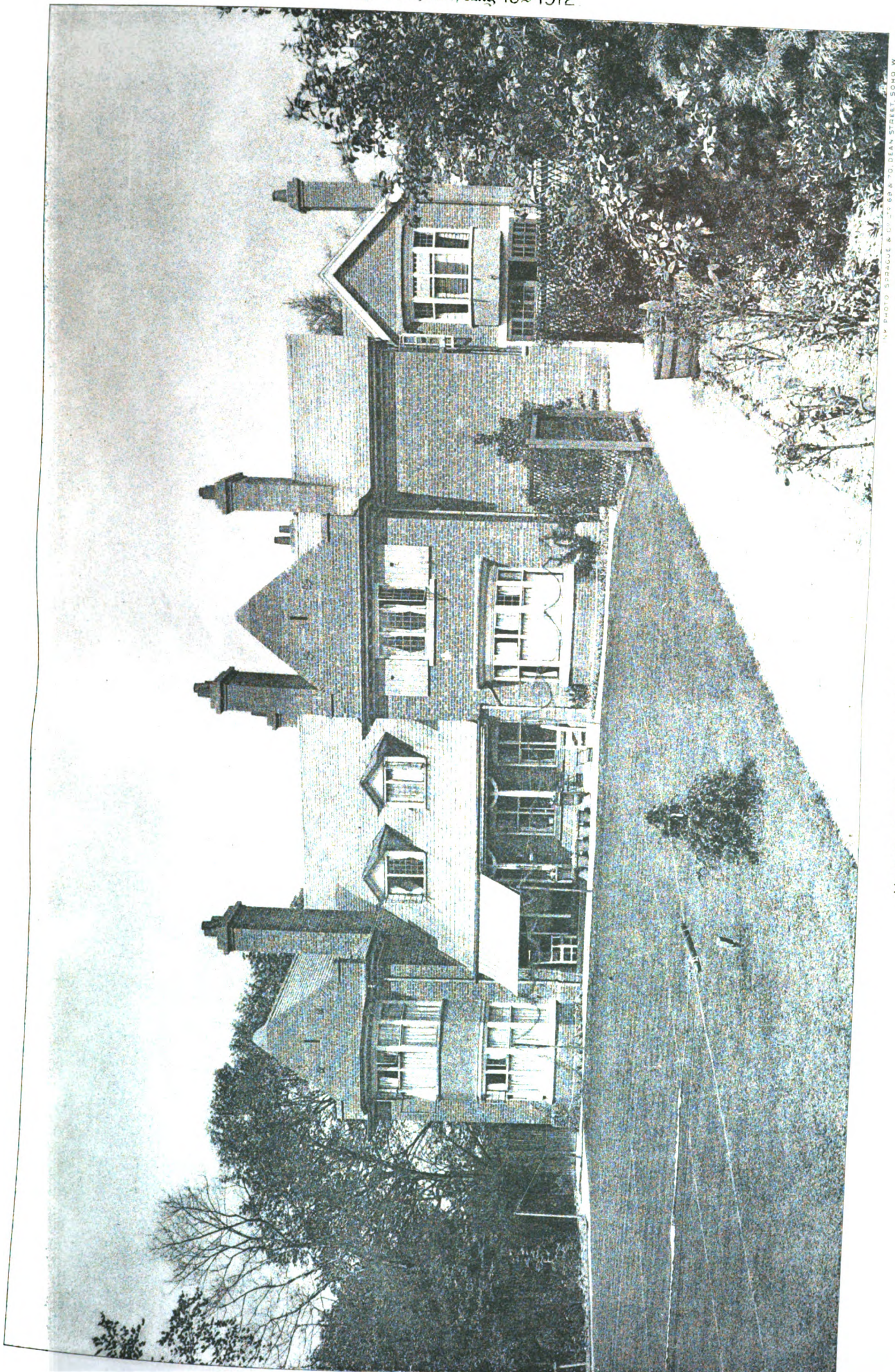
HOUSE, LINCOLN, FOR G. R. SILLS, ESQ.
Messrs. SCORER & GAMBLE, Architects.





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HOUSE, LINCOLN, FOR C. J. BENNETT, ESQ.
Messrs. SCORER & GAMBLE, Architects.



HOUSE, LINCOLN, FOR CYRIL NELSON, ESQ.
Messrs. SCORER & GAMBLE, Architects.

THE PHOTO SCORER & GAMBLE, 68 & 70, DEAN STREET, SOHO, W.





HALL AND STAIRCASE.

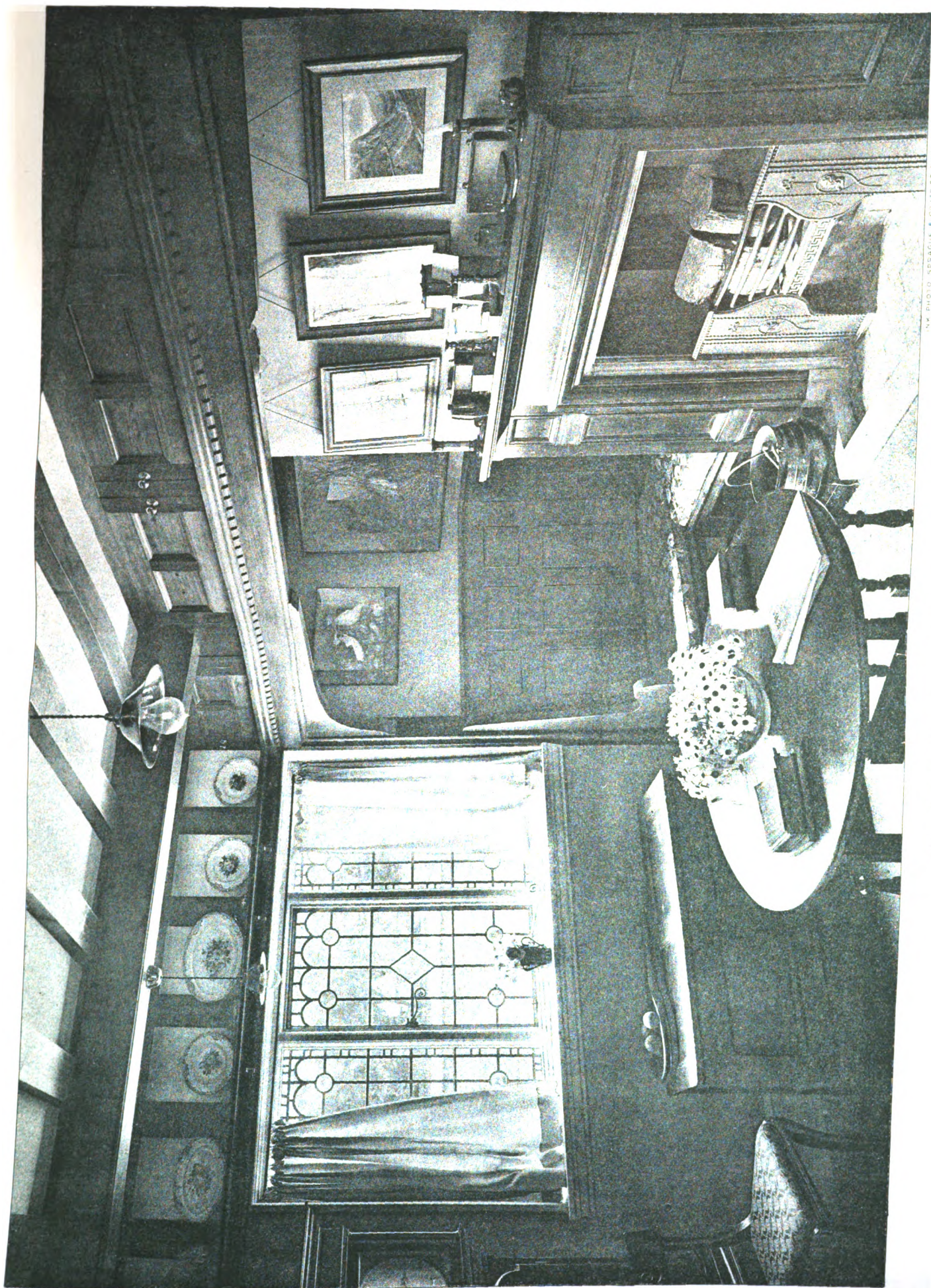


THE HALL.

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MR GAMBLE'S HOUSE, LINCOLN: THE HALL.
Messrs. SCORER & GAMBLE, Architects.

NEW PHOTO SECAGUE & CO. LONDON & 70, DEAN STREET, SOHO W



INTERIOR DECORATION.—II. FRANCE.—II.—THE EIGHTEENTH CENTURY AND AFTER.

By ALBERT E. BULLOCK, A.R.I.B.A.

(Continued from last week.)

THE principal decorators who flourished during the reign of Louis XVI. are Gilles Marie Oppenord, who decorated the Palais Royal, destroyed in 1786. He wrote a work on decoration, published by Huguier, and was contemporary with Christophe Huet; Jacques Verbrecht, who worked for forty years at Versailles, being assisted by Jules Antoine Rousseau in some of the later work, who was the father of Jean Siméon Rousseau (de la Rottière) and Pierre Rousseau. Verbrecht is recorded to have received 49,349 livres in the two years 1735-36 for the decorations to the *Chambre à Coucher de la Reine* for Marie Leccinska, one side of which still remains (see Nolhac and Pfnor). The plans of the apartment were one of the last works of de Cotte. An overdoor dated 1734 is the work of J. F. de Troy, who worked here with Natoire and F. Boucher. The modelled angles to the ceiling were executed in 1770 by Jules Antoine Rousseau. The other work of Verbrecht's at Versailles includes the decoration of the *Chambre de Louis XV.* in 1738, the *Chambre du Dauphin* in 1747, the *Cabinet d'Angle*, 1753-54, and the *Salon de la Pendule* in 1760, both of which latter show similar characteristics. Jacques Caffieri executed the bronzes in the *Chambre du Dauphin*. Verbrecht's decorations to the cabinet of Madame Adélaïde occupied him in 1753 and again in 1767. In the interim he had been at work in the *Salon de la Pendule* and the *Cabinet de Madame Victoire* from 1761-63. He is one of the few decorators whose change in style can best be followed. The evolution of the sculptured panel from the carved ornamented moulding until the freedom of the moulding from the carving was accomplished about 1787 is traceable, as it is also in the work of the Pineau. Verbrecht assisted Rousseau in the *Cabinet du Conseil*, but his share only extended to about 1,000 livres, while Rousseau was paid 21,000 livres for work which he executed from 1755-58. Richard Mique was a successor to Gabriel at Versailles, but practised a cheaper art than either of the last-mentioned of his predecessors in the work. He is said to have introduced coloured golds for decorative purposes, as was previously practised at Nancy by Jean Lamour.

Verbrecht and Rousseau very much influenced, if they did not actually have a hand in, the work of this period at Fontainebleau.

The work of Honoré Guibert, brother-in-law to Claude Vernet, exhibits a similar taste to the practice of Rousseau. He was the sculptor of the chimneypiece in the *Salle-à-manger* of Marie Antoinette at the Petit Trianon, where he worked in 1755.

Jean Honoré Fragonard's work is represented at Chantilly in the doors he executed for Mdlle. Guimard's boudoir. It would be difficult to find a more perfect artist than Fragonard unless it be Leriche or Dugourc, his contemporaries. The painters of this period endeavoured to portray nature with as much life as possible, and this is especially noticeable in the figures from the brush of Fragonard.

Jean Démosthène Dugourc, the brother-in-law of the architect Bellanger, is credited with the decorations at the Château de Bagatelle, Bois de Boulogne, a work which exhibits the highest expression of artistic taste, both in design and execution. The arabesque panels and cameos here are executed in the daintiest manner in bas-relievo work, with a jewelled inner string of ornament next the moulding. René Destailleur, in his "Documents de Décoration au XVIII. Siècle," illustrates several examples of the work of these last-mentioned artists and the delicately-painted panels of the little circular boudoir of the "Appartement à M. Wildenstein," attributed to Leriche. The work is, unfortunately, much faded by age and want of careful preservation, but it leaves little wanting in the contrast of refined taste in design and finish in the sculptured parts. The dado panels have the French motif of commerce, the caduces, in bold relief and the panels above are painted with birds and foliage.

The Rousseau family are responsible for the little bathing scenes painted in the *Bains-du-Roi* in 1770, and in the *Garde-robe* of Louis XVI., which was remodelled and redecorated in 1788-89. Their work in the *Salon de la Meridienne* was executed in 1774, the four Austrian eagles being modelled by the father at a later date for Marie Antoinette. The original decorations in the library when it was the bed-chamber of Madame Adélaïde were also by Rousseau.

The boudoir at Fontainebleau of Marie Antoinette was planned by Pierre Rousseau, who was assisted in the little painted cameos by Jean Simon Bartelemy (or Barthelemy). At South Kensington Museum is a fine example of a Louis XVI. boudoir, which was formerly in the Rue Vieille-du-Temple, No. 106, Paris, constructed for Madame de Serilly, lady of honour to Queen Marie Antoinette. The ceiling is a painting of Jean Jacques Lagrenée dit le Jeune, and represents in the centre medallion Jupiter and his eagle amid clouds, while in each spandril is a moulded and gilt eagle in a wreath. Each of the coved sides contains a classical figure within a circular medallion between two carved amorini, terminating in gilded scrolls, having also in the corner shells and wreaths. The decorated pilasters to the walls are painted with arabesques by Jean Siméon Rousseau (de la Rottière) within carved and gilt oak mouldings. The lunette contains the figure of Pomona painted by Lagrenée, and that over the door the figure of Vulcan.

The chimneypiece, with its muffled terminal figures, is in grey marble, and is the work of Claude Michel Clodion. This room is 16 feet high, 14 feet long, and 10 feet 6 inches wide. The decorations date about 1780, being evidently executed after the return of Lagrenée le Jeune and his brother from Russia. Lady Dilke states that the property originally belonged to Antoine-Jean François de Meyret d'Etigny, Seigneur de Serilly, born in 1746, and his wife and cousin, Anne-Marie-Louise de Pauge, born in 1763. They were implicated in the arrest of M^{me}. Elisabeth de France during the Revolution, whose names appear in a list of twenty-four people sentenced under Robespierre, and only M^{me}. de Serilly was saved of the number, by a ruse and the self-sacrifice of M^{me}. Elisabeth in May 1794, all the others being guillotined.

As a contrast to this example was published last week a view of a contemporary room executed in oak and carved with semi-relief panels from the library of the Montagnacs, 52 rue de Grenelle, Paris. The carving to the panels over the door, &c., contains trophies and implements used in the arts and sciences, intertwined with oak leaves. The room is about 24 ft. by 19 ft., and 11 ft. high. The chimneypiece is in grey marble, with refined carved statuary panels. I am indebted to Messrs. Litchfield, of Bruton Street, Mayfair, for the photo, which is of the actual example exhibited in their sale-rooms.

There exists an interesting room from the Hôtel de Noailles, at Mouchy, attributed to Gilles Paul Cauvet, in the collection of Mons. Guyot de Villeneuve. It is decorated with paintings, and the woodwork is carved and gilt. Dugourc, who has already been mentioned, followed closely the style of Cauvet and the younger Rousseau. He was also a designer of gardens, and is said to have made designs for many in England. His more elaborate designs were for theatre decoration. He was a great inventor, and very largely influenced the taste in decoration of the age. He expanded the scope of wall-paper manufacture, which was chiefly of the order of coloured stencil treatment. He is associated with Jaume in the designs for playing-cards, and was an extensive designer of prints, bronzes, and other decorative articles.

Bordeaux, next to Paris, contains perhaps more examples of Louis XVI. work than any other town in France, for which reason I have given an example from César Daly, of the Grand Salon of the Hôtel de la Préfecture. For other examples see the excellent photographic reproductions of Léon Deshairs' "Bordeaux: Architecture et Décoration au Dix-huitième Siècle."

Decoration towards the end of the century became somewhat stiff and formal, partaking of a Pompeian character, consequent upon the discoveries at Herculaneum about the middle of the century and the publication of treatises by Winckelmann and Le Roy upon the subject. This brought about a new style contemporary with the latter years of Louis XVI., the Revolution, and the Emperor Napoleon Buonaparte, known as the style "Empire." It was chiefly practised by two architects, Messrs. Percier and Fontaine, who decorated the Tuileries, destroyed during the Commune, and Napoleon's wing of the Louvre in this style, which is best illustrated by the photos from examples published in their book showing Napoleon's library, designed originally for the Chief Consul at Malmaison; the interior of the cabinet for the King of Spain, at Aranjuez, the medallions here being by Girodet, and the views by Bidault and Thibault; the chimneypiece in Napoleon's salon at the Tuileries Palace and the Salle de la Venus, Louvre Museum.

The style was practised in a modified form by the Brothers Adam in England, who had met J. J. Winckelmann and C. L. Clérissieu at Spalato. It has merits, inasmuch as it



YOUNG GIRL WITH GREY SCARF.
By H. CHAMEN LINTOTT, R.M.S.



A QUEEN OF YESTERDAY.
By Miss MOLLY POWER, A.R.M.S.

exhibits refined forms and detail, but the pagan figures introduced are a questionable advantage. There are many other examples of the style at Compiègne and elsewhere, and it was adopted by most of the decorators of the epoch, who abandoned their more subtle art in order to be in the prevailing fashion. To the mind of the writer, however, the work of Rousseau, Fragonard, Leriche, Cauvet, and Dugourc is infinitely preferable.

In order to facilitate research by those interested in the subject of interior decoration, I have appended lists of the chief artists concerned in the reigns mentioned, together with the dates of birth and death, as far as can be ascertained, from Phillip's Biographical Dictionary, Bryan's Dictionary, and other works mentioned in the text and list of references.

I have to express my indebtedness to Mr. Rudolf Dircks, the Librarian of the Royal Institute of British Architects, for the loan of Italian photos from the Arthur Cates collection.

(To be continued.)

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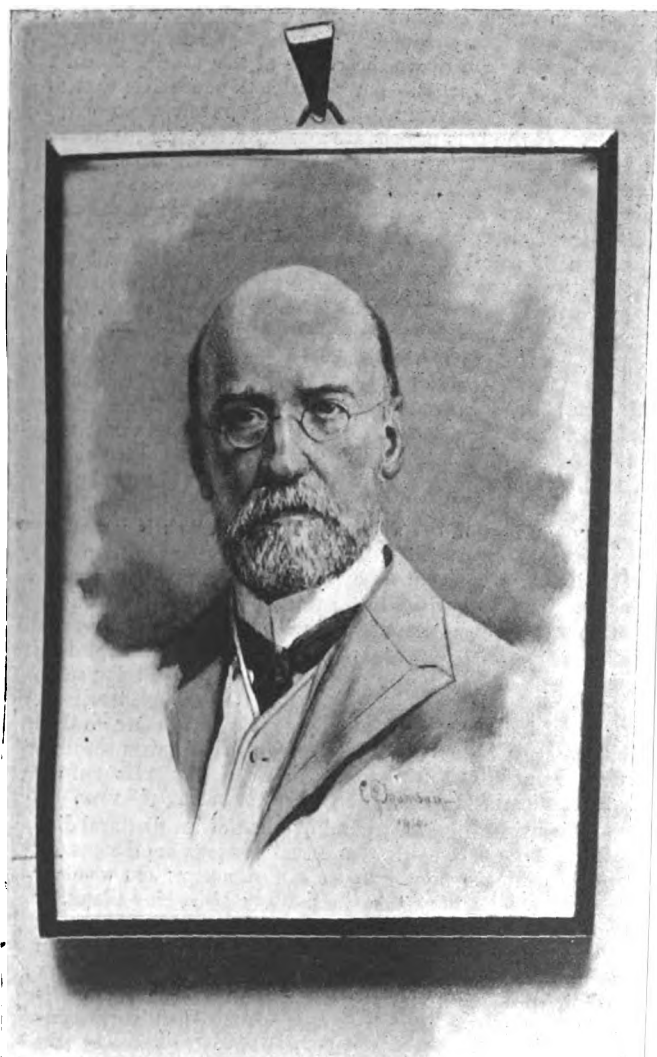
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THE ROYAL SOCIETY OF MINIATURE PAINTERS.

THE branch of Art of which Richard Cosway was such a famous exponent has undergone strange vicissitudes in the course of a half-century. The introduction of photography seemed to give the death-stroke to miniature painting; the new toy (for a toy it was at the time) was patronised to the practical extinction of interest in the delicate colour-work so intimately connected with portraiture. Now that photography has been so developed that everyone is, or can be, a



EDWARD SPICER, Esq.

By Miss E. GERTRUDE THOMSON, R.M.S.

photographer, there is a desire for another toy, and hence the Renaissance of miniature painting.

At the gallery in Pall Mall East the seventeenth annual Exhibition is now opened to the public; and in walking about the room it is pleasant to observe in the technique the general freedom from the quondam high enamel finish, a freer brushwork having been fostered since the revival of the Art. The President, Mr. A. Williams, shows six portraits, of which the best is "His Eminence Cardinal Gibbons," where the reds are cleverly managed, even if we cannot say that they are kept under. Amongst Miss Hepburn-Edmunds' exhibits, the "Study of a Child" is very prettily painted in neutrals. Mr. C. W. Quinell shows four works, of which "The Magnet" fails to convey to us wherein the magnetism lies, and where we find the cold half-tones on the face very trying; in "The Black Veil" the width of the mouth is grossly exaggerated, the lips out of drawing, and their colouring crude, but otherwise the general effect is clever. Of Miss Inez Buchanan's work "Mrs. M. and her Little Daughter" deserves the highest praise; it is fully pictorial in regard to composition, colour, dress, and background, the latter being almost the ivory itself. Miss Rose Dakin's plaster medallion of H.H. Princess Indira of Baroda shows good technique. Miss Alice James deserves high commendation for the portrait of Tristram James, a very pretty full-length; the dull-green curtain background, the dark maroon carpet, and the white-gowned little figure with yellow hair all combine for a pleasant result. Miss Marion Broadhead's work in general is good. Mr. Nicholson's two works are pictorial in the Reynolds style, though this does not apply to his flesh tints. Mr. Hal Hurst has five exhibits; "Solitude" is a study in the nude, with the light and shades very curiously arranged, the light being on the back, with the arms and legs in shade; "The Brown Muff" is not satisfactory as a whole, but the girl's face is piquant, whilst the hat forcing its way out of the picture gives a strange appearance. "A Portrait" by Mrs. Bach is good in the

modern style of miniature work, and the delicate green scarf over the hat is prettily touched in. Of Miss Janet Robertson's works notice can be taken of but one, which is a good portrait of Mrs. James Watt in a crochet shawl and lace cap. Miss Power's "A Queen of Yesterday" is one of the best works in the Exhibition, and is well able to dispense with any kind of finish whatsoever; its bold style is highly effective.

Mr. H. C. Lintott's "His Eminence Cardinal Bourne" contrasts unfavourably with Mr. Williams' "Cardinal Gibbons," previously noticed, so far as the control of the reds is concerned; in his "Young Girl with Grey Scarf" Mr. Lintott has a clever study, which is one of the few paying heed to chiaroscuro, but there is an excess of "graining."

In the old style, "A Puritan," by Miss Nowlan, is very pretty, and makes us think that Longfellow's "Priscilla" has come to life. Miss M. B. Lee's "Portrait Study" in the old style is also commendable. Miss E. G. Thomson shows in "Mrs. McClellan, Senior," one of the best of all the exhibits; it is excellent work, and her portrait of "Edward Spicer" is also first-rate. Mrs. Macdonald's portrait of her husband is good work, bold without being obtrusive. In "The Chef" Mrs. Chamberlin has one of the outstanding works of merit, a thoroughly clever and masterly piece of technique and colour. Miss Lila Sampson's "Sister Catherine" is good, and Miss Dorothy Smart's portrait of her mother looks as if it is a really characteristic likeness. Altogether, this is an Exhibition to be visited.



W. ALISTER MACDONALD, Esq.

By Mrs. W. A. MACDONALD, R.M.S.

MR. H. PHELAN GIBB AND HIS WORK.

Yes! it is perhaps true that Art is long and Life is short; true, also, that Art consists in concealing Art. And yet with it all, though we admit that the Art is carefully concealed by Mr. H. Phelan Gibb, we deny the artistic result. And, on the other hand, if this present Show is indeed Art, we should suppose that if the Art were only shorter Life might be longer.

We would not have Mr. Gibb or anyone else think that this preface is written for the sake of a neat introduction, for it represents accurately the vox populi, if we may judge by the comments heard by us respecting Futurist methods.

Frankly, we regard such an exhibition as an insult to a long-suffering public. We had a companion with us when we went to inspect Mr. Gibb's work (need we say that the companion was a lady?), and she remarked that possibly Mr.

Gibb was posing as a kindly satirist on modern tendencies. Well, charity is the cloak for many sins, but it cannot cover those now on exhibition at the galleries of Messrs. Carfax & Co. Mr. Conrad's Aujourdhuisse studies are trying enough, Heaven knows, but Mr. Gibb's Futurist daubs act at once upon our risible and angry-passionate propensities. Our fair companion further suggested kindly, that if the eyes were half closed the effect was improved; we agreed, and went even further in suggesting that if the eyes were altogether closed the effect was still further improved.

What are the qualities shown in this collection of twenty-seven daubs? A negation of composition, of correct drawing, of decent figure-study, of harmonious colouring; but that is all negative. What are the positive qualities apparent? Bright and crude colouring, as if a child had laid hands upon the contents of a box of paints and daubed them on with all a child's crude ideas. The one quality at all laudable that may be observed is the desire to produce flow of line in a decorative spirit. But Walter Crane has shown us how to do this, and yet at the same time to preserve the decencies of figure and form and the graces of art. "Three Nudes: Study," is evidently one of these spirit-searchings for the flow of line, but a better title would be "The Three Dis-graces." Another sketch, called "Decoration (three nudes)," tears our heart-strings in very pity for the poor women who have been too evidently in the torture-chamber, so disjointed and twisted are they in all their limbs. In No. 18 (so-called "Still Life," which it is not, however), the only reputable piece of work is the liquor in the bottle and that is really well done. No. 11, "Trees, Sketch," is the least objectionable in the whole exhibition—not that this says much for it. No. 1, "Decoration," shows an Egyptianesque lantern-jawed misdrawn object, who would not need to emulate the widow Wadman's manoeuvring to draw Uncle Toby close to her by asking if he saw "anything in her eye"; the green in this object's eye is only too pronounced. But we have no patience for further analysis of this exhibition; truly is it an exhibition in the worst sense of the word.

MINOR DIFFICULTIES IN ARCHITECTURAL PHOTOGRAPHY.*

SOME of the minor difficulties in architectural photography appear so trifling and unimportant after they have occurred that the matter seems scarcely worthy of attention. But when in actual practice we are confronted with these difficulties—when they stand between us and success—there is no question as to their importance. There are few things more trying than, having found an exceptionally tempting subject, to be confronted by some little difficulty for which no preparation has been made. The golden rule is, of course, always to be prepared for anything that may have to be done, and for any eventuality that may occur.

In the first place, I should like to call attention to one or two small points in connection with the apparatus. A difficulty frequently encountered is the slipping of the tripod on a smooth floor. In order to prevent this I employ a small piece of apparatus which is not obtainable commercially, but which can readily be made by anyone with the slightest mechanical skill. It consists of three pieces of wood about 30 inches long by 1½ broad and ¼ thick with a screw, preferably a tripod screw, joining them together at one end. When opened out they form a most effective support for the tripod. Three or four small holes are cut a few inches apart near the free end of each piece, and into one of these holes in each a point of the tripod is inserted. It is the most satisfactory method of supporting the camera on smooth surfaces. Pieces of cork or indiarubber tubing on the ends of the tripod legs have been suggested, and are certainly useful, but there is nothing quite so satisfactory as this when the three strips of wood are extended, the tripod points inserted, and the screw in the centre tightened. In addition, it forms such a trifling addition to the apparatus to be carried that its weight and inconvenience are not worth consideration.

Another simple point is the form of the detachable lens panel. It is a great advantage in architectural work to have the lens panel pierced for the lens above the centre. This gives to the lens a certain amount of rise apart from the rising front. The smaller the diameter of the lens the greater the distance from the centre at which it may be placed. But it is principally in the small lenses that this is

found to be useful, as a larger rise is obtained for the lens without so much twist or strain on the bellows. I have a large range of rising front—2¼ inches—and with the piercing for the lens 1 inch above the centre of the panel I obtain a total rise of 3¼ inches. An additional power like that is sometimes of great value, although it involves no extra trouble. If the lens panels are already pierced in the centre, it is a simple matter to have a new panel made. The arrangement also has the advantage that when the panel is turned in the reverse position the lens is some distance below the centre, and this is useful in certain work.

A third small point is a piece of apparatus that was much better known to photographers of a past generation than to those of the present day—namely, a sky-shade. The sky-shade is as useful in interior work as for shielding the lens from the glare of the sky in the case of work out of doors. It consisted, in the case of the camera shown, of three pieces of wood hinged together, the middle portion resting on the top of the camera, forming the top of the shade, and the two other pieces hanging down and forming the sides. The size is so arranged that when placed in the normal position it can be used with the widest angle lens without cutting off any portion of the subject. The projection is just sufficient to allow the full illumination of the plate when the plate is in the horizontal position. It will allow more illumination than is required when the plate is in the vertical position, and sometimes fails in its object through allowing light to reach the lens from a larger angle than is included in the picture, and so prevent the shielding from being sufficiently effective. When taking a vertical subject, therefore, it is well to move the shade to one side or the other, so that the lens can be shielded on the side that requires shading. It can be adjusted until the troublesome light in front of the lens is sufficiently shielded without obscuring the view.

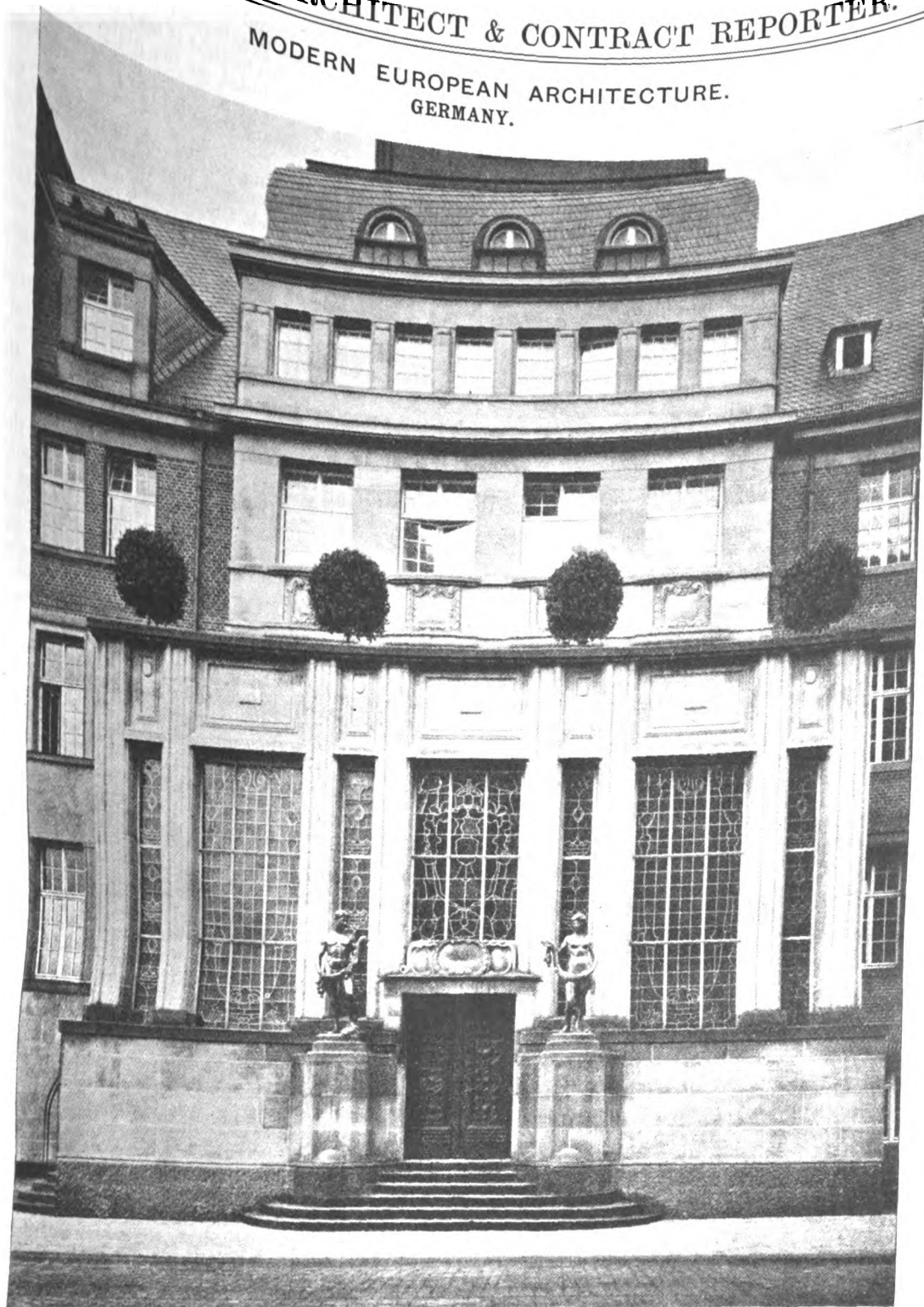
In considering the general question of architectural difficulties, it may be said at once that windows are the greatest trouble that the photographer can encounter; and whatever precautions he may take in the way of backing plates, or even of using plates that are specially suited for dealing with strong contrasts, a difficulty that is artistic rather than mechanical remains. The mechanical difficulty of the window may be dealt with comparatively easily. A plate that is effectively backed will resist halation under ordinary circumstances. But there is still the overwhelming difficulty that one part of the subject is abnormally bright relative to the remainder.

Before dealing with this, however, there is one point in connection with windows, a difficulty of a different type that ought to be mentioned. Sometimes an interior is comparatively harshly lighted. An instance lately occurred in my own work in the case of a comparatively small room filled with machinery, lighted by one small window. The machinery was, fortunately, all on the opposite side to the window. One part of the room was brilliantly lighted, the other parts were relatively very dark, so that the lighting from the photographic point of view was exceedingly unsatisfactory. When the sun was shining, naturally, matters were worse. A strong patch of light then appeared on the floor, and this made the contrast between the bright and the dark parts of the room still greater. The difficulty was overcome by covering the window with white tissue paper, and waiting until the sun was shining directly on it. The tissue paper acted as diffuser of the light, and a soft even lighting was obtained which allowed the details to be shown clearly and without harshness.

In domestic interiors, I have frequently secured a similar result by pulling down white blinds while exposing, and thus obtain a very much more even illumination in the room. All methods of that kind naturally require consideration and adaptation to special circumstances. Sometimes there may be several windows in a room, and a more effective lighting may be provided by pulling down some of the blinds and leaving the others up, or perhaps by darkening some of the windows altogether, and so introducing dark portions in which the darkness is softened by the general diffusion. But this method of diffusing the light by utilising sunlight on a white blind or tissue paper is a factor to be considered in photographic interiors. In interiors the light strikes downwards, and the lower part of the room is better illuminated than the upper part—namely, the ceiling—which almost invariably is too dark. The scattering of the light by such means of diffusion is like a grey day, and gives a much more effective result photographically than the harsh sunshine.

The greatest difficulty of all arises when there are windows in front of the camera. The difficulty arises, not so much

* A Paper read at the last meeting of the Royal Photographic Society, held at 35 Russell Square, W.C., by Mr. H. W. Bennett. A longer report of the Paper appears in *The Photographic Journal* for June.

MODERN EUROPEAN ARCHITECTURE.
GERMANY.[From *Moderne Bauformen*.]

RATHAUS AT KIEL. PRINCIPAL ENTRANCE.—Herr HERMANN BILLING, Architect.

mechanically, as in the strong difference between the light of the windows and the dark portions of the room. In interior work, whether windows are included or not, sufficient exposure has to be given to secure full detail in the dark shadows with a normal development for the subject. With such a subject a window, especially if the sky is seen through it, is enormously over-exposed, and everything near the window will be much too light relatively to the other portions. The subject will range itself into two groups of tones, one relatively exceedingly light near the window and the other, away from the window, relatively very dark.

The difficulty of windows is two-fold. One is the spread of the light in the subject itself, the other the diffusion of the light from the surface of the lens. The latter causes practically the same effect as if the camera in photographing a landscape were pointed towards the sun when the sun was actually shining. A scattering of light results which gives the impression that the photograph was taken in a fog. Not only does this difficulty arise from photographing an

interior when the camera is pointed towards the window, but, in addition, because it is the shadow side of all the objects in the room that is being photographed.

Sometimes, particularly in domestic interiors, small windows are found, very effectively arranged, and adding considerably to the beauty and attractiveness of the room, but unless due precautions are taken in dealing with them they will add to the photographer's troubles.

When there are several windows in a room and only one is included in the picture, the task is much easier than when all have to be included. My favourite plan, whenever practicable, is to cover the windows for a large portion of the exposure. When there are other windows in the room giving light by which to expose, this becomes an easy matter. For this purpose I equip myself with several hundred square feet of some black material, and although this adds considerably to the weight and bulk of what has to be carried, to the enthusiastic photographer it is a small matter if success depends upon it.

Whenever practicable I prefer, naturally, to cover the window from the outside. But some windows are almost inaccessible, and carefully arranging the covering inside becomes necessary. The windows are covered for the greater part of the exposure, then the lens is capped for a few moments, the coverings taken down, and a short supplementary exposure is made. The examples shown bear no indication of the covering.

When the windows that have to be included are the only windows in the room, the difficulty of the task is considerably increased. In that case it is practically necessary to arrange not to include the whole of the window; if the whole window is covered there is practically no light remaining with which to take the photograph. But when there is only one window is a room and that window or a portion of it has to be included, then, of course, the portions of the window that it is proposed to include will first be covered, leaving the other parts uncovered. It will be necessary to exercise great care in adjusting the shields in the front of the camera in such a manner that only the light from the portion of the window that is going to be covered is allowed to reach the lens. The lens must be carefully shielded from those portions of the window that are left uncovered during the whole of the exposure.

At times one of the difficulties in interior photography is to have sufficient range for the camera and to leave space enough behind it properly to carry out the focusing. When practicable, the camera may be placed in a doorway, partially outside the room, and an additional four or five feet secured, and it is then possible for the doorway to form a very efficient lens shield. Naturally, the photographer will make use of any material that he finds to his hand.

It is always desirable to arrange, if possible, that the light shall appear to come from the windows included, if it would come from those windows in the natural course. The windows must be given the appearance of naturalness. That is to say, they must appear to light the room as well as to serve in the lighting of the photograph. Work under conditions which necessitate the covering of the windows during a great part of the exposure is exceedingly slow, and exposure is prolonged, for if the quantity of light entering the room be reduced perhaps by 75 per cent., it is necessary to expose liberally if a harsh lighting effect is not to follow.

The supplementary exposure which is made with the coverings down cannot, I think, be considered in proportion to the total exposure. Rather, it is an independent factor. Some guidance as to the length of this exposure may be given. When a comparatively open garden or similar subject is seen through the window, the exposure, when the coverings are taken down from the window, may be taken as one second at $f/16$, with plates 200 H. and D., under the best possible lighting. The exposure may vary from that up to five seconds, the longer exposure being given if the landscape seen through the window is enclosed or relatively dark.

A frequent difficulty is getting sufficiently far away from the material that has to be photographed. An open door, as in the case of a room, may give four or five feet extra, but, sometimes, the camera has to be placed in a corner, with insufficient space behind it to allow for focusing or for arranging the picture satisfactorily. And at times, in a small interior, this necessity for space for working prevents sufficient of the subject from being reproduced in the photograph.

The method that I have adopted for overcoming this difficulty is to place the camera first in such a position as to give sufficient space for focusing. When all is arranged it is moved back so that a larger view is obtained in the place of a smaller one. Here, some means other than looking on the focusing screen must be taken to ascertain how much subject is included on the plate.

If there should be a window behind the camera all that is necessary to do is to open the lens to its full aperture, walk away diagonally from the camera to the farther side of the room, and then look through the lens to the back of the camera. In this way a point will be found at which the light from the focusing screen ends, and instead of a little circle of light being visible, there will only be, say, darkness. The parts of the room at which this change from light to darkness is seen form the limits of the view included on the plate.

If there is no window behind the camera a different plan has to be adopted. The glasses may be removed from the lens and the mount put back into the flange. Then two pieces of stamp edging placed on the frame of the focusing screen may be seen through the lens mount in the back of the camera,

and these pieces of stamp edging may be seen from the parts of the room that are just beyond the limits of the view, as just described. By this method it may readily be determined how much view is included on the plate. The camera can be moved right back into a corner, much closer to the wall than if it were necessary to go behind it in order to arrange the subject.

A method of working well known in the past, but not so much appreciated by modern photographers, is focusing by means of the swing-back. Sometimes a subject has the foreground very close to the camera, and the other parts are at a very great distance. In working with a whole plate camera and using a lens of 11-inch focus the difference between the camera extension for even 10 feet and 200 feet respectively is very great, and no amount of stopping down will under ordinary conditions give sufficient depth of definition.

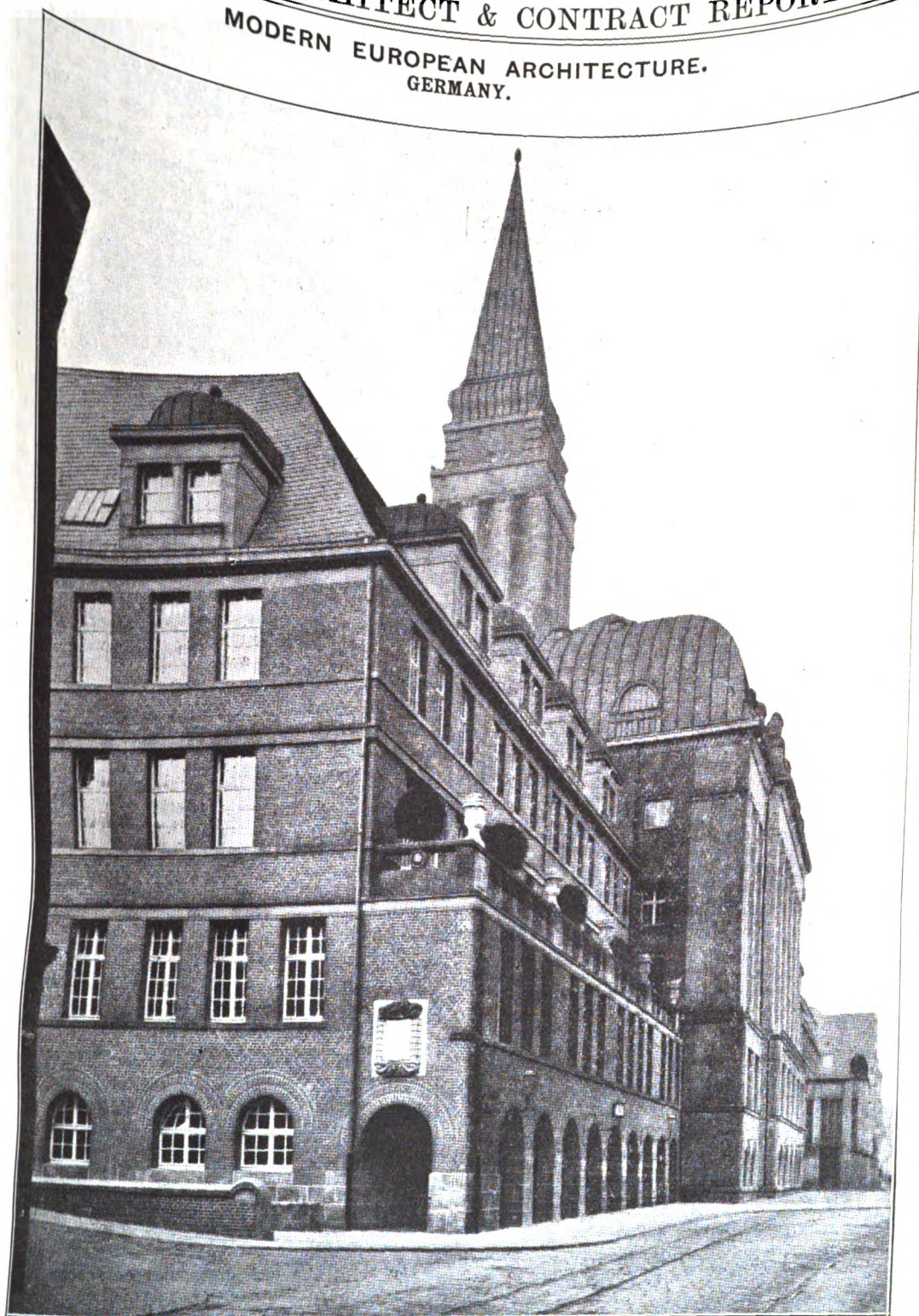
In the case of a subject in which the foreground is really on the ground and the distance comes on the upper part of the plate, the camera may be tilted downwards, the swing-back set in a vertical position offering a ready means of adjustment for the depth of focus required.

The height of the camera should generally be the normal height of vision, but the length of focus of the lens must have a considerable influence in determining the height of the camera. Under normal conditions, if on one camera there were three lenses of 6, 10, and 20 inches focus, and the camera were placed at the same height from the ground, the nearest foreground would produce a very different effect, according to the lens used. With a very long focus lens the ground appears too much foreshortened; with a wide-angle lens it appears to be running uphill. With a wide-angle lens, I prefer, if possible, to bring the camera down to 3 feet or less from the ground in order to avoid that effect. In domestic interiors the camera should be just sufficiently above the level of a table to show the top of it, so as not to give the impression of looking along it as though it were an edge.

Mr. Bennett at the end of the meeting made some supplementary remarks as to his method of estimating interior exposures:—

Exposure was a subject presenting difficulty, though not any serious difficulty if the factors were considered systematically. He calculated on the basis of $f/16$, using plates 200 H. and D., and in the best possible light of the year. Any alteration in these factors meant that the exposure must be correspondingly modified. Under these conditions the exposure for domestic interiors—rooms in modern houses—would vary, in the majority of cases, from one minute up to four minutes. This was not a very long range. A room with light walls and furniture would be fully exposed in about one minute. A room with dark walls and furniture would take two, three, or four minutes, or in extreme cases five minutes, but in his experience no room in a modern house would take longer than five minutes. When the rooms had no furniture a very great difference was noticed. In that case the exposure might be as short as twenty-five seconds.

In churches or cathedrals that were well lighted the exposure might be approximately one minute for a general view of the nave and if badly lighted it might be three, or in extreme cases four minutes. The aisles of most cathedrals had distinctly inferior lighting. If they were lighted with plain glass windows, those windows being fairly unobstructed, the exposure again might be one minute. If the windows were obstructed by trees or other buildings the exposure might be anything up to two and a-half or three minutes. Stained glass windows necessitated from two to four times the exposure that would be necessary for white glass, simply by reason of the colour of the light transmitted by the glass. The choir of a cathedral generally required a much longer exposure than the nave, owing to the small quantity of light reaching the dark oak choir stalls. Exposures here might be from four to twenty minutes. In Lichfield four or five minutes would suffice; in Ely it had to be twenty minutes. After all, this was not a very long range. Crypts taxed the ingenuity in the matter of exposure. While some might be fully exposed in ten minutes, there were others where two hours would not be too much. These suggestions for exposure were calculated for the best possible daylight, so that for any time of the day or the year when the light fell short of its best modifications in the exposure would have to be made. The exposures in that case must be multiplied by the degree of falling off in the light from its best quality. If the light had only half its normal value the exposure should be doubled. In this manner the amateur might obtain a sufficiently accurate negative for every plate he exposed.



NEW RATHAUS AT KIEL.—Herr HERMANN BILLING, Architect.

[From *Moderne Bauformen*.]

THE LONDON SALON OF THE ALLIED ARTISTS' ASSOCIATION.

As we wandered around the arena and gallery of the "Royal Albert Hall for the encouragement of Arts and Sciences" our thoughts insensibly reverted to that delightful mid-Victorian story by Charles Dickens, "The Christmas Carol," wherein Ebenezer Scrooge, in the course of a brief nightmare had presented to him the vision of the Past, the Present, and the Future; in the vision he was attracted to the Past, was ashamed of the Present, and aghast at the Future. *Mutatis mutandis*, that is our attitude respecting Art in its varying phases to-day.

We have had occasion of late to inveigh against modern practice and modern tendencies; and here in this Salon collection of eleven hundred odd exhibits (very odd, some of them!) our feelings become intensified unpleasantly.

The Association does well to display on a poster the effigy of an inartistic Pegasus; for truly the flights indulged in by many of the—er—artists, carry them to heights

undreamt of and undesired by the men and women of pencil and brush of past years, past decades, past centuries.

We should not have patience to enter at length into the case against modern Art; but let this be said: that if the "Royal Albert Hall for the encouragement of Arts and Sciences" is degraded by such a display, the explanation is easily forthcoming why such work is not made Taboo. According to the Foreword attached to the catalogue, the Association was formed "to enable artists to submit their work freely to the judgment of the public, without the intervention of any middleman . . . exactly the same treatment is accorded to all members, irrespective of their position or reputation" (or want of reputation, let us hasten to add). Again, "Each subscriber has the right to show three works, without submitting them to any Selecting Jury . . . the keynote is inclusion not exclusion." That is quite explanatory, and incidentally it relieves the democratically selected Hanging Committee from all responsibility and from any justifiable clamour on the part of an outraged public, that the Hanging should be hanged.

Naturally, there is some good work on show, and our endeavour will be to give equal prominence to good and bad; indeed, the former will be really and preferably favoured; for whereas the proportion of it unnoticed will be slight, there will be a far larger percentage of bad work that will escape attention. And, en passant, we may add that we are confining our attention to the pen, pencil, and brushwork.

We may commence the review by referring to such works of the Hanging and Artists' Committees as we desire to make mention of; and taking these in alphabetical order we will commence with Mr. J. B. Manson, remarking that we have seen both better and worse, on the whole, but as regards his "Still Life" (a flower in a bowl on a woolly patchwork cloth) it is, of course, his own, but "a poor thing" at that. Miss Anne Marks' exhibits are worthy of a better position, but as this is a matter of chance by "drawing," there is nothing further to add on that score. "In the Wake of the Past" presents to our view a dear little boy in scout's uniform, saluting the armour of a long-dead ancestor; the whole conception is pleasant and the technique is good. "On Strike" shows two of Miss Marks' characteristic kittens pathetically begging for alms, and "Tired" portrays two other of Miss Marks' feline pets in a comatose condition; we recall that a black and white study of the last decorated the walls of the Royal Academy a while ago. Unfortunately, the propinquity of highly-coloured exhibits is detrimental to the colour scheme of the group just reviewed. Mr. C. H. Martin's "Columbine" is very clever indeed, and is effectively thrown up against a blank background. Mr. Frank Morris's landscapes ("Dunkery, Sunset," "The Orchard Brook," and "The First of October") are charming in their greens and russets. Miss C. M. Nichols' black-and-white sketch of St. Peter's Hospital, Bristol, is well worthy of inspection.

In Mr. Eric Forbes Robertson's "The Birth of Love" we have to notice the first of the very many displeasing works of to-day and of the day-to-be. If we regard Mr. Robertson as an *Aujourd'hui* it is perhaps just a trifle less uncomplimentary than if we dubbed him a Futurist. Miss Schebsman's portrait of Mr. Landon Ronald is not commendable; the flesh is corpse-like, and the blue background is displeasing nor to be condoned, even if it be meant to flatter Mr. Hubert von Herkomer by its imitation of his methods.

We were pleased with Mr. Hans Schwaben's contributions; he can paint atmosphere, sunlight and moonlight with an equal command of brush, and his boats in "Toilers of the Deep" and "The Fishing Fleet" are really good. So far for the members of the Hanging Committee. When we regard the work of the Artists' Committee it is less satisfactory. We will refer to seven out of the nine members of which it is composed; six of these are exponents of the Art of either to-day or to-morrow, such as Messrs. Robert Bevan, Harold Gilman, and Stephen Gore. Mr. Malcolm Drummond's contributions are crude of the crude. Mr. Charles Ginner's work can only be described as awful; "The Victoria Embankment Gardens" is a veritable Chinese puzzle. One of Mr. Mervyn Lawrence's pieces is called "Study for a Decoration." Ciel! what decoration! and the ultramarine plastered on! But for a welcome change, Mr. W. J. Lineham provides us with "Noontide," which is good and deserves to find a purchaser.

And now let us regard the works of other members of the Association. And in order to get it over, we will first of all dispose of the representatives of the schools of What Is and What May Be. There is Mr. A. Wolmark with his "Fisherman," that might be the work of a Futurist elementary student, and again in "A Decorative Still Life" we are confronted by superlative crudity; for this seems to be the keynote of the school in *pau lo post futuri*—crudity and nudity. Mr. Ernest Collings' "View of the Sea" is even worse than the piece just mentioned, if that be possible; it is altogether as if a child were taking its first essay in plastering on colour. And Florence Small (Mrs. D. Hardy) in "Dolly: a portrait" and "A Bowl of Fruit" pronounces herself as To-day (with a big T); so also Miss W. Walker, as evidenced by "Washing at River's Edge"; and as for her "Still Life" one wishes it were dead and buried. Miss Ethel Wright has departed from her old methods, so as to be in fashion; and though we recognise the craving for flow of line, the result is most displeasing in "Peonies" and "Rhythm." Mr. J. H. Hay supplies a variety, by blistering on the colour in "Moonlit Seapiece." M. Fernand Piret's "Coronation of King

George V." is cruelly bright and primordial. Mr. G. Ommanney's "The Dancer" is crudity personified in the colouring of the girl and the *mise-en-scène*. In the Black and White section, we regard it as an insult for Mr. H. Brodzky to show his "Drawing," which is in fact out of drawing, and with the head half-eaten away. And Mrs. Cora Gordon's "Frame of Drawings" looks like the work of Ablett's earliest preparatory class.

It is with a feeling of unbounded relief that we turn to some works which admit of commendation and more. Miss Ida Lees in "Moonlight" presents an effective study, and Miss Maude Harris's "Bank Holiday" shows pretty colouring, and this, too, may be said for Mr. Underwood's "Sunshine and Rain." Mr. Claude Walker's "Munster-on-Sea" is similarly commendable. Mr. Carr Armstrong's series of nine oil-colour sketches is well worthy of inspection. Mr. C. R. Morrison's landscapes are good and realistic. Mr. G. Pritchard, too, deserves favourable notice for his out-of-door studies.

In Mr. Sydney Herbert's "Water Colour" we are in the presence of a work than which nothing in the show is better. Mr. Cooke's "The Smithy" is reminiscent of Stanhope Forbes, and is quite good of its kind. Mr. C. Butler's nature studies are very good, and Mr. James Towers's "Tol Pedn Penwith, Cornwall," is fine indeed. The late Mrs. Thomas's studies compose well and are prettily tinted. Mr. de Brie's "The Scout" shows a vigorously painted cavalier. Mr. R. Walters's "A Summer's Day on the Wye" is quite a relief, after the eye-strain engendered by much already seen; and Mr. Tennyson Cole's portrait of Mrs. John Dennis is evidently a good likeness, with good technique in support.

Mr. Lawrence Hardy's Black and White study of "Horses Resting" is good, but there is too much barrel to the horse. Mr. T. E. Harrison's "The Mermaid" is very delicate penwork, and Mr. Harold Oakley's "Wireless" is one of the few first-rate exhibits, with excellent light and shade. And with a notice of Mr. J. E. Vinnicombe's studies, which show good distribution of the black and white, let us close our note-book and hasten into the outer air, where the fresh green of the trees in Kensington Gardens may do something to restore our peace of mind.

MR. KAY NIELSEN'S BLACK AND WHITE DRAWINGS AT THE DOWDESWELL GALLERIES.

In the ranks of artists, as elsewhere, we must expect to find mediocrity, as well as outstanding merit and conspicuous failure. We regard Mr. Nielsen, as here represented, as belonging to the first-named class, with a decided leaning towards good mediocrity. What he has done others may do, and some others could do much better. The drawings in general, including the ten in illustration of "The Book of Death," are certainly imaginative; indeed, imagination is Mr. Nielsen's strong point, and one that should hereafter stand him in good stead. In the latter series, "Solitude" is the best; the look of despair on the lover's face after his loved one has become the bride of Death is very good. Again, in "Vision" we see the lover sitting up in bed watching the levitation trick as performed upon his lost love, and a big—too big—moon forms a part of the picture.

Speaking generally, Mr. Nielsen's figures are so very uninteresting and so very attenuated. In "Spleen" we see little Billikins in a despairing mood, but, still, the composition is good. We cannot approve of depicting Scheharazade as kneeling quite nude before the Sultan whilst relating the thousand and one tales; from the text we gather that she was in bed whilst relating the stories, staying her discourse each morning when the time for rising supervened; but after saying this we may add that the sketch is decorative.

Two of the best drawings on exhibition are those of "The Flying Trunk," one of them being a particularly pretty colour-sketch. Also the two drawings of "The Story of a Mother" are excellent, especially where she is shown seated in despair before the flower, which droops as Death passes by with his scythe.

"The Breath of a Great City" is one of the most imaginative of all the sketches, showing the condensation of the city's human-exhaled breath into a visualised half-dead, wholly weary face. "The Prodigal Son" is clever, with an expressive physiognomy. Mr. Nielsen understands composition and likewise the distribution of black and white; but with it all we are not impressed by his work.

The Architect.

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FORTHCOMING EVENTS.

Friday, July 26.

Architectural Association Camera, Sketch and Debate Club : Foreign tour in Brittany (sixteen days).

Saturday, July 27.

Northern Architectural Association : Students' Sketching Club.
Royal Sanitary Institute : Opening of Exhibition at the Exhibition Buildings, York.
Sanitary Inspectors' Association : Northern Centre Meeting at South Shields.

Monday, July 29.

Royal Sanitary Institute : Annual Congress opens at York (six days).

Monday, August 12.

Architectural Association : Annual Excursion commences at Shrewsbury (six days).

ARCHITECTURAL ASSOCIATION ANNUAL EXHIBITION.

It was a happy thought on the part of the Architectural Association's Council to vary the practice of showing the work executed during the session in their school by holding an exhibition of drawings and photographs of the performances of former students illustrating the results of their training. There is always a suspicion of unreality and artificiality in the production of school work. One never knows quite how much credit is due to the master and how much to the scholar. But when a student has left his college and produces good work on his own initiative and responsibility we can estimate what he is and what he has been made by the training he has undergone. We can in fact estimate more truly the value of the Architectural Association as a school for architects by work done by its students after they have left than by that done during their sojourn within its class-rooms and studios.

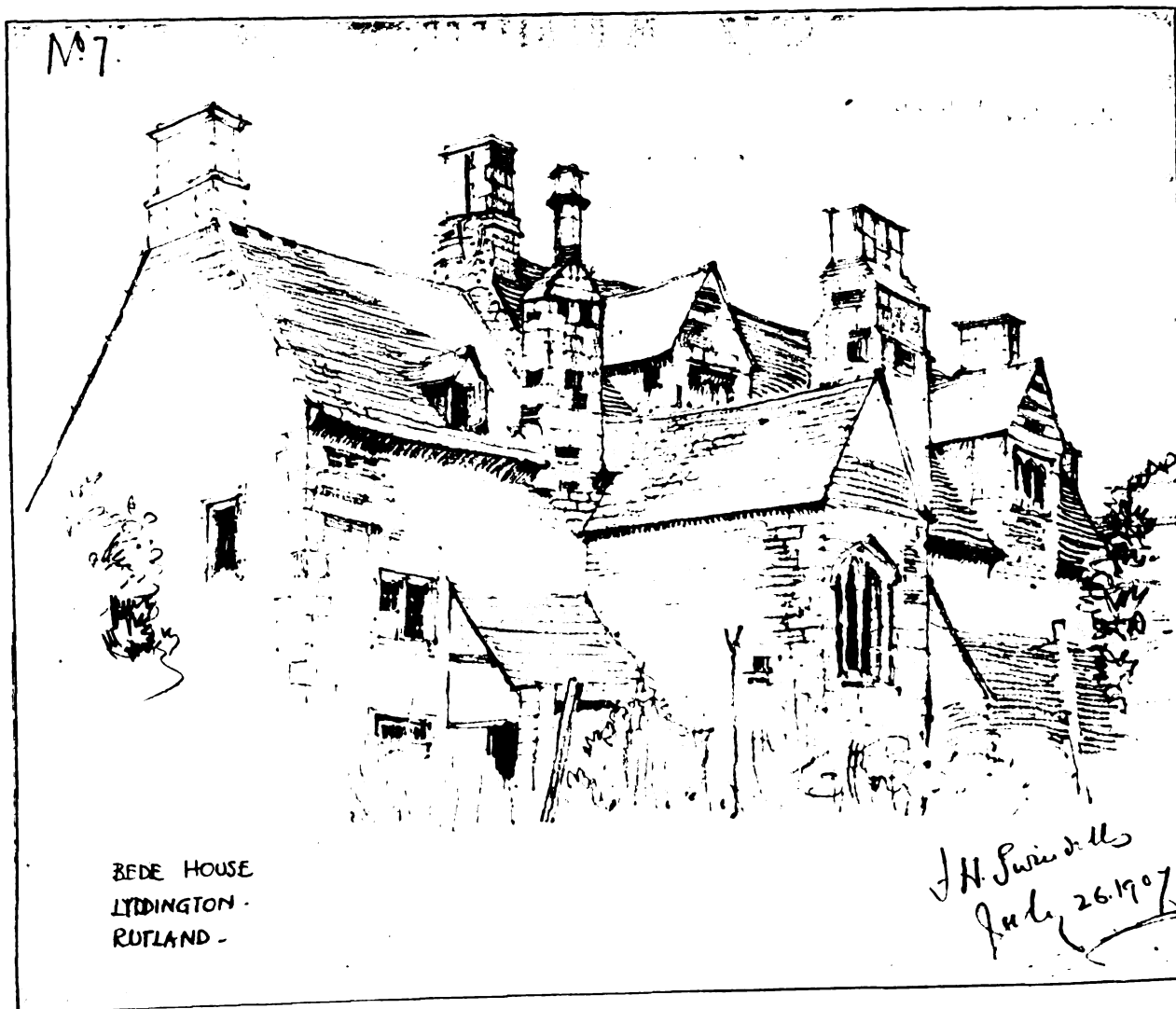
We naturally in an exhibition of this sort look to see if there is any general character about the work which may be taken as indicative of the atmosphere of the training school under review, and if so, what that atmosphere is and what kind of influence it exercises on the young architects who have been reared within it. The exhibition at Tufton Street does to us indicate that there is a distinctive atmosphere at the Architectural Association which differs from those of Paris, Liverpool, Manchester, London University, or South Kensington. There is a general tone and feeling about all the work which proves that the school has an individuality. There is a flavour pervading and influencing the personality of all those who have been students which, if maintained in after life, will always tempt the discriminating observer to mark each of these architects as "an A.A. man," just as there is an unmistakable cachet amongst "Ecole des Beaux Arts men."

We find then that A.A. men after they leave the schools still remain ardent students of old work and devote themselves to careful and thorough measurement as well as to sketching. For example, Mr. Arthur E. Maxwell's silver medal drawings of Compton Wynyates which were so much admired at the Royal Institute annual show in January last are here again to be seen and would reflect credit upon any institution that trained so excellent a student. Mr. H. Hubert Fraser, Pugin student, is another student of whom the A.A. may be justly proud and exhibits excellent measured drawings from Southwark Cathedral, the Church of St. John the Baptist, Kewston, Hunts; the Bishop's Palace, Buckden, Hunts; Southwold Church porch, and other places. Mr. F. T. W. Grant is another example of the earnest and

painstaking student, as is proved by his measured drawings of Edington Church, Wilts. These instances are sufficient, even if they were not supported as they are by others, to show that the Architectural Association education produces students of old work who are zealous and thorough, who have learnt how to measure and love to do it. Nor need it be thought that from the examples we have mentioned there is a disposition to restrict study to mediæval work, for Mr. T. A. Lodge, with his measured drawings of Queen Mary's Block, Greenwich Hospital, and others show that there is as much care bestowed upon Renaissance architecture. It will be noticed, too, that the A.A. students have been taught to discriminate. There are no specimens of labour wasted upon unworthy subjects simply because they are old. The buildings studied are worth studying.

Draughtsmanship has always been a strong point of the Architectural Association schools, and if there has sometimes seemed to be in the efforts of those still under instruction some tendency to slap-dash methods, one can forgive this when it matures into the brilliant effective draughtsmanship of Mr. Philip G. Hepworth, Mr. Cyril A. Farey, Mr. Clough Williams Ellis, Mr. W. J. Palmer Jones, and others now supporting their alma mater in the present show. It is to be noted that the A.A. men in attaining the brilliancy have escaped the laboured mechanism of the French draughtsmanship of the Ecole des Beaux Arts. There is a freshness and verve about the A.A. man's drawing that is absent from the Parisian. The latter always makes us think what a lot of time and care must have been spent on the drawing, the former that the draughtsman thoroughly enjoyed the handling of his medium, whether it were black ink, crayon, colour or pencil. Speaking of pencil, what charming pieces of work are Mr. F. R. Barry's sketches from Italy.

But after all the measurement of old work and the making of effective or charming drawings are not architecture. A school may produce earnest students and brilliant draughtsmen, but if it does not make architects it is not an architectural school. How does the Architectural Association prove its capacity in this respect? What sort of buildings do its students design and erect when they get the chance? First of all, we have examples of competition drawings whether for students' prizes, such as Mr. R. Mountford Pigott's Soane medallion design for a Shakespeare memorial theatre and Mr. A. Douglas Robinson's for the city entrance in 1911, or for open competitions which for most young architects are their only opportunity for showing what they can do in Architecture with a capital A. Mr. Robinson's series of perspective studies shows the effect of good training in right



FROM SKETCH SUBMITTED BY MR. F. H. SWINDELLS FOR PUGIN STUDENTSHIP, 1912.

methods of design, and though neither he nor his fellow-student won the prize, the A.A. need not be ashamed of their efforts.

In open competitions we have Mr. Lodge's and Mr. Farey's essays for Marylebone, the latter's design for Regent Street; Mr. F. Gordon Troup's and Mr. J. Reginald Truelove's efforts for the Port of London Authority's offices. As the latter was one of the six in the final test and the other designs mentioned were at least commendable we think the A.A. is herein justified.

Then we have specimens of buildings erected from the designs of former A.A. students, illustrated both by photographs and working drawings. Naturally as the architects concerned are mostly young practitioners, the buildings are usually small, although Mr. Oliver Hill has had a good-sized job at Moor Close, Binfield, Berks. Mr. W. J. Palmer Jones has had an interesting one in a Desert House at El Assassif, Luxor, Upper Egypt, and has made good use of his opportunity, but we may fairly say without exception that the executed designs of former students of the Architectural Association show a loving care and an ability that speak well for the future and evidence a capability to maintain the peculiar position of modern British domestic architecture.

On the whole we consider the Association has good cause to be proud of its students and the students to be grateful for the early training they have received.

In opening the Exhibition, the President, Mr. Gerald C. Horsley, announced that a Third Year's Day School Course was being instituted, and that the R.I.B.A. Board of Architectural Education had consented to accept this extra Third Year Day School Course as equivalent to the present Third and Fourth Years' Course in the Evening

School, and would grant certificates to satisfactory students who had completed their three years in the Day School, exempting them from the R.I.B.A. Intermediate examination. He also announced that the Royal Academy authorities had consented to admit students who had completed the Association's three years' course to the Royal Academy Schools without requiring them to pass the usual entrance examination in subjects other than design.

NOTES AND COMMENTS.

We have received the programme of an interesting literary competition which is the result of a legacy to the city of Barcelona by Don Francisco Martorell, of Pena. From this legacy a prize is offered of 20,000 pesetas (£666) for the best original work on Spanish archæology. The work may be printed or in manuscript and must be sent in before noon on October 23, 1916. It must be written in Latin, Spanish, Catalan, French, Italian, or Portuguese. The competition is being conducted by the Mayor and Corporation of Barcelona, who will on the sending in day appoint a jury of five judges to select the best work, and the prize will be awarded on April 23, 1917, the festival of St. George, patron saint of Catalonia. The author of the successful work must publish it in the Spanish language within two years of the award of the prize; failing this the Corporation of Barcelona may publish, and in that case will own the copyright.

We learn from the *Manchester Guardian* that the old Globe Room in the Reindeer Inn at Banbury is to remain in England. The dealers who purchased the room and had it cut out of the inn and brought to Old Burlington



OLD HOUSES.

LINCOLN

FROM SKETCH SUBMITTED BY MR. F. H. SWINDELLS FOR PUGIN STUDENTSHIP, 1912.

Aug. 1908
F. H. Swindells

Street are stated to have an offer from America for this relic, but they are now willing to accept an offer made by a well-known public man here who desires to begin collecting with the Globe Room as his initial treasure. It would be very curious, says the *Manchester Guardian*, and we quite agree, to know the inner history of such transactions as those of the Tattershall chimney-pieces, the old Globe Room, and many another fine piece of old English architecture that has been torn from its setting and brought to London with a mysterious chorus of "Purchased by an American millionaire" and "Old England going piecemeal across the Atlantic," and so on. Apparently in these sorts of transactions the American millionaire never really purchases the article until it is quite settled that no Englishman or English society is able to do so.

The decision of the Senate of the University of London in favour of the Foundling Hospital site for the proposed new University buildings may be regarded as the adoption of a compromise. In centrality of situation it is not quite so good as the Bloomsbury site, but it approaches this latter and on that ground is better than the South Thames bank, but it is far inferior to the latter in prominence before the public eye, and not even equal in this respect to the Bloomsbury location.

At the 64th annual meeting of the Somerset Archaeological and Natural History Society Professor Boyd Dawkins, the President, in his address gave some excellent advice on the use of museums if they are to be a means of education and not merely repositories of curiosities, so far as the general public is concerned. Referring to the need of the use of museums in general education, he said that in this country general education was suffering very much from its being confined merely to book knowledge. That was all very well, but it was possible to have too much of book knowledge, and as a rule the book-worm was a most unpractical person who was no use at all in the world outside books, and the general drift of things was from the acquiring of knowledge by books alone towards the study of the things themselves. The things themselves were the things which were taught, he might say, in the museums, and it was impossible to study history, it was very difficult to study even the material out of which history was built, without examining the things themselves. Courses of lectures should be given, and the schools and teachers should be encouraged to come and see what they could learn from the things in the museum. That was an important direction in which the services of that Society could be enlisted in favour of the higher education of the country. Throughout the country there was a gradual drift towards

that happy situation. He had spent something like thirty years of his life in organising a museum in Manchester, and that museum was a most important adjunct not only in the education of the University, but in the education of the masses, and they could do that if they liked at Taunton. It merely required a little thought; it merely required the popularising and the bringing of these things within the reach of plain people; it merely required the stripping off of those long technical names which were as related to science as thorns were to a bramble, and replacing them by the plainest names they could get; and when they once excited the curiosity of the children they would be on a long way in the direction of growing as original thinking men and women.

In the course of the proceedings of the Joint Committee of the Lords and Commons considering the Bills now before Parliament relating to the care of ancient monuments Sir Rowand Anderson gave some valuable evidence. He said it was impossible almost to devise a scheme or system in dealing with our ancient monuments that would be free from criticism and many legal and other difficulties, but he thought some approach might be made to such a thing. Nothing would facilitate legislation on this subject more than the education of the people to know and appreciate the value of what they possessed. The means to this was (first) an inventory of everything that was deemed worthy of preservation; (second) a survey by means of drawings and photography of all their ancient buildings and historical objects. The first of these was in progress. As to the second, there was now in Edinburgh a collection of drawings of their ancient buildings and their accessories, the like of which was not to be found anywhere else in this country, and this collection was constantly increasing. It was not confined to ruins, but included old churches, castles, bridges, old town halls, historical buildings in occupation, with their fittings and furniture, all carefully surveyed and measured. There must be something like 1,400 sheets of drawings and photographs, and these had been produced without any expense to the public. The making of this survey was a part of the curriculum of the training of an architect, and its influence was now becoming apparent in the work of the younger generation of architects. It had been the means of rescuing from oblivion and loss many interesting things. No better illustration could be given than Holyrood Palace. If possible, the collection of these drawings should be reproduced and sold at a price that would cover the cost. Unfortunately, there was no money available for this purpose, and the collection was consequently much curtailed in its usefulness. Antiquarian and other kindred societies, heritors, and others dealing with parish churches, landowners with interesting remains on their estates, and those occupying houses of more or less historical interest would benefit greatly by having this publication to refer to. In any new arrangements of the Ancient Monuments Commission he hoped the publication of these records would be taken into account and favourably considered.

Sir Rowand Anderson also, in reply to a question, touched on a matter subsequently discussed at a congress of archaeological societies held in London last Monday. Sir Rowand suggested that no old parish church should be restored without the sanction of the Advisory Board. The congress came to a similar conclusion and added a resolution expressing the desirability of having an inventory kept of all movable church property.

THE ARCHITECTURAL ASSOCIATION.

THE following is the list of awards and prizes in the Day School of Architecture for the session 1911-12:—

First Year.—Book prize for first place in History Test paper and general excellence in this subject, M. T. Waterhouse; book prize for first place in Construction Test paper, and general excellence in this subject, A. S. Turner; A.A. Sketch Book for first place in Freehand Drawing, A. S. Turner; the Studio Prize for the best portfolio of drawings

made during session, A. S. Turner and M. T. Waterhouse equal; hon. mention and authors of drawings selected for school portfolio, M. H. C. Doll, C. J. Brooks, W. A. Forbes, H. F. Gossling, and J. Burford.

Second Year.—Travelling Studentship, £15, for studio and lecture work during session 1911-12 and general progress, H. J. H. Dicksee; specially commended and special prize given by headmaster, H. G. Satchell; hon. mention for general progress during session, R. S. Wallace, E. C. Davies, J. S. Hodges, and W. W. Locke.

End of Session Test.—Subject, "A Study for a Market Hall." Award and prize given by Mr. Gerald C. Horsley, President A.A.: First, E. C. Davies; second, R. S. Wallace; third, H. J. H. Dicksee. Drawing selected for presentation to school portfolio: H. J. H. Dicksee, E. C. Davies, H. G. Satchell, R. S. Wallace, and W. W. Locke. Students recommended for the Association two years' course certificate: E. C. Davies, H. J. H. Dicksee, J. S. Hodges, H. G. Satchell, H. G. Tebbutt, R. S. Wallace, and W. W. Locke.

EVENING SCHOOL.

First Year.—Book prize, value £2 2s., H. A. N. Medd; second prize, value 10s. 6d., F. W. Mackenzie; hon. mention, H. S. Davis.

Second Year.—Scholarship, free pass to third year, value £15 15s., J. B. M. Walch; book prize, value £2 2s., E. K. Smith; hon. mention, A. J. Thompson.

Third Year.—First prize, scholarship, £15 15s., divided between D. J. Gordon and T. W. Dowsett; hon. mention, H. F. Prynn and H. D. Archer.

Fourth Year.—Travelling studentship, value £15, A. T. Hardman; book prize, value £2 2s., T. F. Ford; hon. mention, T. F. H. White, F. P. Spooner, and D. W. Stuart.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the Final examination have been approved:—

Subject III. (a.)—Mr. R. A. Barber, Mr. E. F. Bothwell, Mr. H. C. Bradshaw, Mr. R. S. Dixon, Mr. H. A. Dod, Mr. E. Gee, and Mr. T. C. Lawrence.

Subject III. (b.)—Mr. H. Lidbetter, Mr. E. Prestwich, Mr. W. H. Thompson, Mr. R. A. Walter, and Mr. W. E. Woodin.

Subject I. (b.)—Mr. K. Glóver.

Subject II. (a.)—Mr. K. Glover.

Subject III.—Mr. K. Glover, Mr. G. C. Charlewood, and Mr. C. J. K. Clark.

ROYAL ARCHÆOLOGICAL INSTITUTE.

THE Summer Meeting of the Royal Archæological Institute opened at Northampton on Tuesday, July 23. The town itself can boast of no unworthy record, both in local and national history, ever since it was selected as one of the important centres of the Middle Ages, while it serves as a splendid centre.

The proceedings opened with a reception of the members in the Town Hall by the Mayor and Corporation. The building itself is a most commendable piece of modern Gothic. The first portion was commenced in 1861 from the designs of Mr. E. W. Godwin. Twenty years ago a considerable extension was carried out by Messrs. Jeffery & Holding, who were careful to maintain the completest harmony with the other portion.

The civic welcome by the Mayor was reinforced by that of Mr. S. G. Stopford Sackville, M.A., D.L., the President of the meeting, who spoke on behalf of the county. He alluded to the losses by death which have occurred in local archæological circles since the Institute paid their last visit here thirty-five years ago. But they still had in Northamptonshire men who cultivate archæology and art, like Mr. J. A. Gotch, the Rev. R. M. Serjeantson, and Mr. C. A. Markham. There existed a certain amount of feeling that the restorations carried out half a century ago were not what they ought to have been. One of the benefits of a visit from such a body as the Royal Archæological Institute was to remind people of the true principles of such work. He could not help wishing that the clergy had more time to study the arts of the past, as their position was one of singular responsibility. In the county there were no very fine remains of castles, but there were still many notable mediæval and Elizabethan houses, which were as fine as any in England. Their excellence and number were to some

extent due to the facilities of water-carriage which had always existed.

Sir Henry H. Howorth, K.C.I.E., D.C.L., F.R.S., F.S.A., the President of the Royal Archaeological Institute, acknowledged the welcome to the very typical English county of Northampton. Its country gentry, he said, were the most famous of all English squires, for they lived largely on their estates, and took their share in the administration of the county affairs. Furthermore, that part of the Midland counties was the fountain of literary English. Its rich soil and valuable resources made it wealthy from very early times; in fact, there was no other county which had been so continuously prosperous. Although there have been serious tragedies in it, as at Fotheringay, the memories of the county were, taken altogether, exceedingly happy and pleasant. The Archaeological Institute had come to see Northamptonshire's beauties. Their Society wished to be tested by their "Transactions," which remained on the extraordinarily high level of seventy years ago.

The first visit on the programme was to

ST. PETER'S CHURCH.

The Rev. R. M. Serjeantson, M.A., F.S.A., in describing the church, said that the structure as we now see it appears to have been built during the third quarter of the twelfth century. It was not, however, the first ecclesiastical building to occupy the site, for during the restoration of 1851 fragments evidently belonging to a pre-Conquest church were found here. A thirteenth-century manuscript contains a rather pretty legend connected with this earlier church. According to it a certain Norwegian (who had spent a year and a half in it, serving God day and night in fasting and prayers) was told in a vision that if he dug in a certain spot he would find beneath the pavement the relics of a saint. The tomb was brought to light, but for a time it remained unopened, until one Easter eve, when a crippled girl who had been placed in the church to pray for a cure was completely healed, the church being suddenly lit up and the bells chimed a joyful peal. Near the body was some writing, which stated that St. Raginer, nephew of St. Edmund, and, like him, murdered by the Danes, was buried there. Edward the Confessor, who was king at the time, paid great reverence to the place, and caused a great shrine of gold and silver to be made from the offerings at the tomb, and in it the relics of the saint were placed. This is the last heard of the shrine; but there continued till the fifteenth century to be a Guild of St. Raginer in this church. The twelfth-century church now standing is conspicuous as to the interior by the slenderness and gracefulness of the pillars and by the broad bands which surround many of them—a very unusual feature at this date—and by the claw ornaments or griffes at the bases connecting them with the square plinths below. The capitals are all different. The fact that in every case the arch as well as the capital is carved adds much to the beauty and effectiveness of the work. Early in the fourteenth century the aisles walls appear to have been rebuilt on the original site and of the old materials. The tower collapsed in the reign of James I., demolishing the western bay of the nave arcade. When rebuilt a good many years later, it was erected one bay eastward of its original site. The east end was also shortened in the same way, though again restored to its original length in 1851. None of the old fittings remain except the font, which dates from the fourteenth century. In the thirteenth century special rights of compurgation were attached to this church. Anyone in the town or neighbourhood who wished to clear himself of any crime by compurgation was compelled to spend a solitary vigil in St. Peter's, and next morning to take a solemn oath that he was innocent, and also bring a certain number of others to swear that they believed in his innocence. Other churches tried to claim the same privilege, but Bishop Grosstête decided that the right was attached to St. Peter's only. The patronage of St. Peter's belonged originally to the Cluniac Priory of St. Andrew in this town, until it was recovered by the King in 1266. It remained in the Royal hands till 1329, when it was granted to the hospital of St. Katherine, near the Tower of London, who have presented ever since. During the latter part of the sixteenth century the church was a meeting place for the more advanced Puritans. At the west end are three monuments of some interest—(1) a tablet to the memory of John Smith, one of the earliest mezzotint engravers, who was buried here in 1743; (2) a white marble bust to Wm. Smith, the father of British geology, who discovered the fact that the world was built in strata; (3) to the memory of George Baker and his sister Elizabeth, who died respectively in 1851 and 1861. It was

Miss Baker who with her own hands removed the white-wash and plaster from the capitals of the church, and who saved the whole building from being pulled down to make room for a new brick church.

Mr. W. H. St. John Hope, M.A., remarked that the removal of the limewash by Miss Baker was a very meritorious work from one point of view. But it should be observed that the carved stonework had been deteriorating ever since, owing to the decomposing action of the gas. The two alternative remedies were the removal of the gas or the covering of the surface again with clean whitewash. The early builders did not like a gloomy interior, so they introduced whitewash. The fact that some of the pillars were composite led him to believe that the church was intended to be spanned by a barrel vault, and for this purpose they prepared the capitals for the side arches to carry the abutment across the aisles. Against this theory an objection might be raised from the thinness of the walls. They had, however, to remember that Norman masonry varied in quality enormously. The Normans built in concrete, and if their mortar happened to be good the walls would stand an enormous strain. But sometimes the mortar was rotten, in which case a collapse easily occurred.

After an interval for lunch the party reassembled at

ST. SEPULCHRE'S CHURCH.

Here the guide was again the Rev. Mr. Serjeantson, who is vicar of the parish. The church of the Holy Sepulchre at Northampton was, he said, built originally about the year 1100, and was meant to be a reproduction of the church of the Holy Sepulchre in Jerusalem. The latter church was built in the first instance by the Emperor Constantine, and consecrated in A.D. 335. It consisted of (1) the circular building, which covered the actual sepulchre—this was an oratory rather than a church, and contained no altar at first, though in later times three altars were placed in it; (2) to the east of the sepulchre was a large quadrangle "open to the pure air of Heaven," and surrounded by cloisters on three sides; (3) still further east was the great church known as the Martyrium, built upon the spot where the three crosses were alleged to have been found by the Empress Helena. The altar was at the west end of the church, and that faced the Holy Sepulchre. Constantine's church was burnt in 614. It was soon, however, rebuilt, but was again destroyed in 1010 by order of the Caliph Hakem, who ordered the whole church to be razed to the ground. Permission was quickly given for its rebuilding, though the work was not completed till 1048. The new church of the Holy Sepulchre was somewhat different from the one built by Constantine. It consisted of the circular building over the sepulchre, to which was attached an eastern choir. Neither the cloisters nor the great church of the Martyrium beyond were rebuilt. We thus get the church which was the prototype of all our European round churches—a circular nave with a choir attached to it on the east. The Holy City was captured by the Crusaders on July 15, 1099, and it is probable that the Northampton Sepulchre church was begun almost immediately in 1100. It has generally been assigned to Simon of Senlis, the first Norman Earl of Northampton, who is known to have taken part in the first Crusade, and who was a great builder. It was probably intended as a thankoffering for the recovery of the Holy Sepulchre from the infidels, and for his own safe return. The building was quickly completed, for by a charter which cannot be later than 1116 Earl Simon handed it over to the Cluniac Priory of St. Andrew, which closely adjoined it. This charter at once disposes of the theory that the Northampton round church was founded by the Templars, who did not come into existence as an Order till 1128, and who did not arrive in England till 1134. From 1116 till the Dissolution of the Monasteries, St. Sepulchre always belonged to monks of St. Andrew's, and never had the slightest connection with the Knight Templars. The church consisted in Earl Simon's time of a circular nave and a small chancel, which terminated probably in an apse. Towards the close of the twelfth century the north wall of the chancel was pierced by arches, and a north chapel was added. It is interesting to know that this chapel was dedicated to St. Thomas of Canterbury. It will be remembered that Beckett's ever-memorable trial took place in Northampton in October 1164, and that he escaped from the town through the North Gate, which was within a stone's throw of St. Sepulchre's. He was murdered in 1170, and canonised in 1173. It must have been very shortly after this time that the new north chapel was built. The two arches which connected this chapel with the then chancel are of distinctly transitional character. During the latter part of the thirteenth century a second

north chapel was added; the south aisle was built and perhaps rebuilt early in the fourteenth century. Towards the close of this century the clerestory and triforium of the circular part of the church were pulled down. Much loftier Pointed arches were built upon twelfth-century piers, and a fine tower was added at the west, taking the place of the dome which had previously covered the "round." At the same date were built the three lofty arches giving access from the "round" into the nave and side aisles. The wooden corbels which support the present nave roof date from the fifteenth century, and represent musicians with various instruments. In 1634 the extreme north aisle was pulled down. In 1861 the present chancel, with north and south chapels, was added, and the second north aisle was rebuilt on the old foundations. In mediæval times, in addition to the High Altar, there were altars dedicated to St. Thomas of Canterbury and St. John the Baptist, to Our Lady, to St. Nicholas, and to St. Martin. The present fittings of the church are all modern. On the south side of the "round" is an interesting processional cross locker, and on the north side a twelfth-century tympanum is built into the wall. Close to this is a splendidly preserved brass to the memory of George Coles (and his two wives and twelve children), who died in 1640, and was a great benefactor to the town.

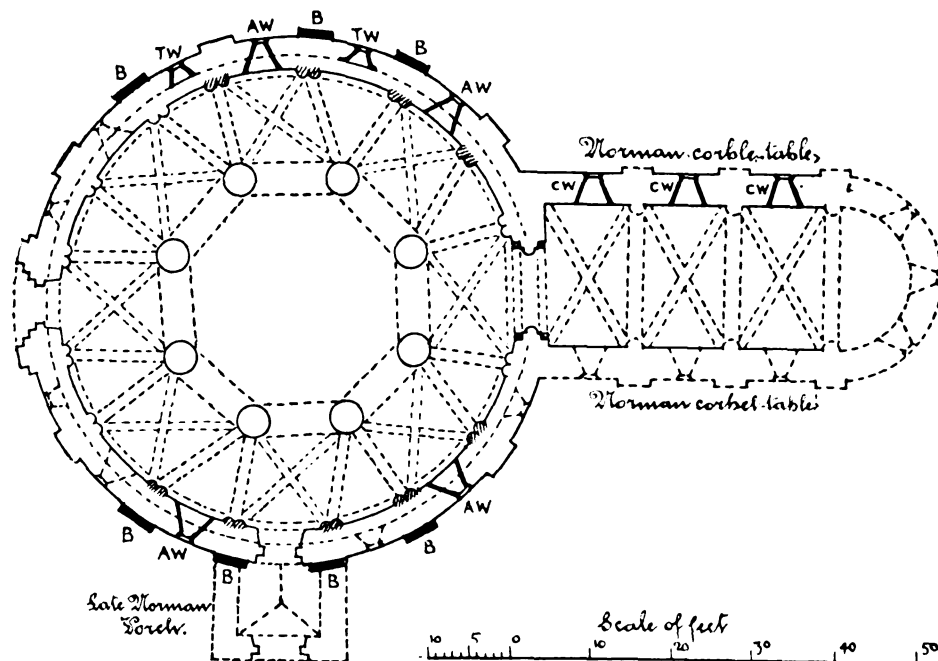
Mr. Hope then made some interesting observations. The

would be found to include a round church. These Templars' or Hospitallers' places were on a very small scale; the chapel certainly need not have been large, because the Templars were not themselves priests, and were not bound to attend any services.

A somewhat hurried inspection only was possible before a move was made under somewhat heavy rain to

ST. GILES'S CHURCH.

The church of St. Giles was, according to the Rev. R. M. Serjeantson, in the early twelfth century a small cruciform building, with central tower and without aisles. In the first half of the next century the chancel was widened by rebuilding the north wall 4 feet northwards of its old line, thus adding considerably to its width, but throwing the centre of the west window quite out of line with the middle of the chancel arch. The chancel was also lengthened. The builders next turned their attention to the nave. They began on the south side, and evidently intended to add a south aisle. One arch was built up in the hitherto unpierced south wall, but then there came a pause. The tower began to show signs of weakness. This was remedied by the simple expedient of blocking the wide round-headed tower arches on all four sides and piercing these with very much smaller arches. The fillings of the northern and southern arches have never been removed, but those on the east and west



ST. SEPULCHRE'S CHURCH, NORTHAMPTON, ORIGINAL PLAN.—From Cox and Serjeantson's "History of the Church of the Holy Sepulchre, Northampton."

building was, he said, a very remarkable structure because of the round part of it. Some little time ago he had gone to a good deal of trouble in investigating all that could be found out about round churches. They were best divided into four classes. First, there was the ordinary parish church, such as this one and the one at Cambridge—these had nothing to do with the Templars. Next came the chapels, of which the most noteworthy was the one in the Tower of London, with its round nave and square chancel ending in a polygonal apse; there had been another example in the Palace of Woodstock. Thirdly, there came the churches which were undoubtedly belonging either to the Order of the Templars or to the Knights of Jerusalem. The present Temple Church in London had a predecessor near Chancery Lane, and when the present block of offices were being erected on the site the workmen discovered the stumps of some of the pillars. Fourthly, there was the round church erected at Clerkenwell by the Hospitallers of St. John of Jerusalem, and which was as large as the recently-restored example in the Strand. It was customary to talk of these structures as a round nave, but he did not feel at all sure that it should not rather be regarded as the base of a belfry like the ordinary central tower. Although the plans were borrowed, the common-sense mediæval builders saw in it an opportunity for introducing an original feature. Such a belfry would make a very picturesque building of it. There were in this country quite a large number of sites where the Templars had Preceptories. He felt very little doubt that if proper investigation was made on these sites one after another

sides were opened in 1853. Subsequently aisles were built on the south and north sides, and north and south chancel chapels were also added. In 1614 the tower fell, and crushed a considerable portion of the nave. About the middle of last century the church was enlarged by the addition of two bays further west and an extra north aisle. From a documentary point of view, the most interesting point with regard to St. Giles is the fact that all through the Middle Ages it served as a meeting-place for the Mayor and Assembly of the town. The borough records contain frequent instances of regulations having been drawn up in the church. We find the same secular use of a church everywhere. Indeed, at Romney the vicar was obliged to bribe the Corporation not to hold their meetings in church while Divine service was being held. St. Giles contains an interesting fifteenth-century tomb of alabaster in the north aisle. It is known as the Gobion monument, although the last male Gobion of the Northampton branch died in 1301. Near by are two chained books.

The next move was to the Town Hall, where tea was taken by invitation of the Worshipful the Mayor in the Council Chamber. The five Corporation maces, dating from the time of James I., Charles II. (2), and George I. (2) respectively, were on view.

After tea, brakes and motor-cars were entered for a drive of about one and a half miles to

THE ELEANOR CROSS AT HARDINGSTONE.

This cross, standing on the outskirts of the park at Delapré Abbey, was, of course one of those erected by

Edward I. upon the route of the funeral procession in 1290 of Queen Eleanor from Lincoln to London. Above the octagonal base, which itself stands on eight steps, are four canopied niches, each of which contains the figure of a queen, facing the four cardinal points. The head of the cross has long disappeared, and at the time of the Battle of Northampton (1460) it was known as *crux sine capite*. The heraldic sculpture and the naturalistic treatment of foliage are noticeable points in its decoration.

Mr. St. John Hope briefly dealt with the historical side of the monument. Towards the end of 1290 King Edward and Queen Eleanor of Castile set out together for Scotland. On the way the queen died at Harby, in Nottinghamshire, on November 28. Edward was extremely attached to her after fifty years of happy married life, and he hastened back to London so that the queen might be buried with due solemnity. In accordance with custom the body was disembowelled, and the parts taken out were buried in Lincoln Cathedral, where a beautiful monument was set up. Her heart was put in a vessel and conveyed to London, where it was deposited in the church of the Black Friars. The conveyance of the body to London occupied a good many of the short November days, and entailed numerous stoppages. Tradition has it that wherever the body rested a cross was

IN PRAISE OF SLATES.

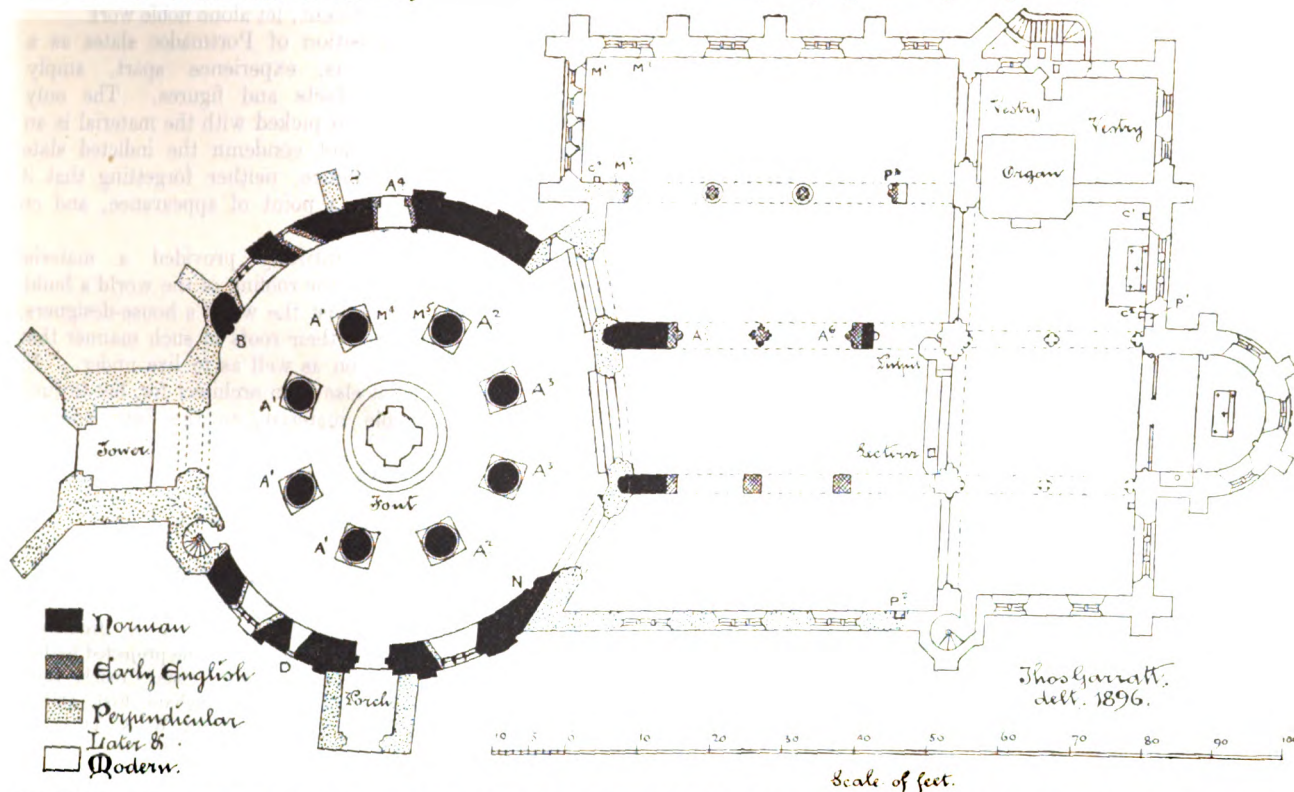
By CLOUGH WILLIAMS-ELLIS.

WITH so much talk amongst architects of the right use of materials—and the right materials for various uses—their comparative neglect of Nature's own roofing, slate, is curious.

We have vast stores, practically inexhaustible stores of it, all ready and awaiting our pleasure these hundred million years and more; ready to our hand for the mere hewing and cleaving of it, yet we waste our time and our money in all manner of "slate substitutes" and "patent roofing" that can seldom compete with natural slate *qua* economy, and never approach it *qua* quality.

I suppose the old, old lure, "something new in roofings," carries the same irresistible appeal to some constructors as do the latest fashions to all good women, no matter if novelty be the only conceivable recommendation.

With the perennial crop of fancy roofings their newness and their strangeness is, sad to say, their attraction in chief; they sprout hopefully, they sometimes flourish



ST. SEPULCHRE'S CHURCH, NORTHAMPTON, AFTER RESTORATION.—From Cox and Serjeantson's "History of the Church of the Holy Sepulchre, Northampton."

set up. We certainly know that a number were ordered and executed. In the Public Records Office there are a series of accounts of the queen's executors, covering the two years in which they were executed. The most important was put up in Charing Cross—though for what reason we do not know, as the journey from the last stage to Westminster was so short. It is a little difficult to arrive at its exact cost; it seems to have been nearly £800, which was a tremendous sum to be spent on a memorial in 1290. The next one mentioned is that erected at Lincoln at a total cost of £134. The cross put in in the middle of Cheape was probably destroyed as far back as the fourteenth century; beautiful fragments of it may be seen in the Guildhall Museum. The cross at Hardingstone is one of a group of crosses which were contracted for by a master mason named John of Battle, and which work out at an average cost of £95. The verge or shaft of this one was wrought by William of Ireland; the whole of the imagery and a good deal of the carving was done in London. As William of Barnac was paid to bring it to Hardingstone, it is not impossible that the material used may be Barnac stone. It was curious that the crosses about which no details are found in the records are those of which no remains exist. Apparently the crosses were commenced and then left unfinished, being finally cleared away.

In the evening a paper was read at the Grand Hotel by the Rev. R. M. Serjeantson on the history of Northampton. (To be continued.)

exceedingly for a little space; they are forced into precocious growth by a liberal top-dressing of guarantees, promises, testimonials, and unproven assertions—and the like cheap fertilizer—and lo! the promising little plant suddenly withers away; disillusioned householders waving sad farewells with their barren guarantees. And the epitaph of that fancy roofing—is it not written in the pages of the *London Gazette*?

Still, slate need not fear competition from this yapping pack of mongrel substitutes, when the best they dare even bark for themselves is, "We're not quite so cheap, but we're nearly as good."

And that's only their bark. Their bite—well, they are seldom allowed a second one.

Of tiles I will speak later; a good tile is a good tile all the world over. There is nothing better, save a good slate, and perhaps it's unfair to compare them as it is man's poor best in the roofing line pitted against Nature's—and Nature has been in the business a good deal the longer of the twain, say, by a million centuries.

Still, there are several causes that have probably contributed to the professional boycott of slate, the very qualities of the material proving a snare in incompetent hands.

What sort of vision does "slate roof" conjure up in the mind's eye?

Probably an excessively low-pitched roof of large thin purplish-blue slates, crude of colour, hard of line, mean of proportion, an altogether machine-made, exotic, unfriendly looking thing.

That's, unhappily, a true picture; that, 'tis true, 'tis pity, but greater pity still, it need never have been.

That it need never be so in the future is what I am striving to show.

Meanwhile, for the tile-at-any-price architect, the tragedy lies in the fact that, despite this depressing picture, the roof is as mechanically perfect a roof, as sound and as everlasting and as weather-tight a roof as any engineer in all Westminster could contrive for you.

And the architects, the real live ones, must bravely face the facts; face them on every side if there is ever to be a great and living architecture of the present and the future.

They must admit what the engineers know for the truth—that there is no roofing that is *quite* so good as a Portmadoc slate. (See Tables at end.)

They can like it or they can lump it; they can't deny it; they cannot shirk it.

The real architect will very soon find worthy work for slates to do, and the good slate, its worth so long unrecognised, would worthily respond to intelligent and sympathetic handling.

Roofs will be conceived on generous lines in terms of slate, slatily. A sane slate treatment will harden into a new and better roofing tradition, and we shall be spared tiles, tiles, tiles *ad nauseam*, good, bad, and indifferent, few of the first but plenty of the others—in season and out—as often out as in.

Elaborate physical tests and experiments have established beyond all question the mechanical perfection of certain Welsh slates (notably those from the Festiniog group of quarries known to the world as "Portmadocs"), while chemical analyses have placed their lasting powers above all possible doubt. However, the great test of time needed no chemists to establish that, there being hundreds of old roofs, not merely in existence, but in perfect condition, to give eloquent testimony to the longevity of such slates.

So the slate roof is a good roof; there cannot possibly be a better, as most will admit, adding mentally, "Nor an uglier."

And why that last? It is partly prejudice, partly ignorance, for there are slates and slates; but sad to say, is very largely the result of actual observation.

The fact is, the slate is such a willing, obliging creature that it has been meanly taken advantage of—and shamelessly exploited by the penny-wise.

Take the usual flat pitch of slate roofs aforesaid—it seems to be commonly regarded as an inevitable concomitant of slating, whereas it is simply the result of stinting, speculative builders having unluckily discovered that slate can safely be laid at an extraordinarily small slope and still be weathertight. I bet they know the exact angle to half a degree; also, that when used in large thin units, no lighter roof can be contrived, excepting with some pig-in-the-poke patent materials.

That's really one of the failings of slate—it will allow you to take all sorts of liberties with it that a tile would not stand for an instant.

Imagine even a 30° roof of plain tiles on 3½ in. by 2 in. rafters, with no boarding or felt between them and the bedroom ceilings.

Picture the state of affairs after the first sharp shower with a driving rain behind it.

A short shower isn't much of a test. The best of tiles, the best, not the least, will absorb a great weight of water before they are fully saturated; and while they are thus sucking up, not much rain will get through.

When they have drunk their fill, and if the added weight of water hasn't already broken down your light flat rafters, the bedroom ceilings will very soon make it clear that a tile is not a Portmadoc slate, and refuses to be treated as such.

One sometimes hears it said that slate roofs are hot in summer and cold in winter. Well they are, and they are not.

The truth is that again the obliging slate has had its good nature taken advantage of, it having been found that slates make a perfectly weathertight roof without the expensive and weighty underclothing of felt and boarding that the pampered tile demands; and it is scarcely fair to pit slates neat against tiles plus felt plus boarding, and then declare that slates have lost the match for non-conductivity.

In short, the long-suffering slate will submit to indignities that would literally break a tile, and this being once discovered, it has reaped the inevitable reward for its willingness, and become the drudge of all and sundry, the builders' maid-of-all-work.

And so it has come about that slate, the most perfect of roofing materials, natural or manufactured, is largely associated with architectural drudgery. We see the dull work, the dirty work it has been put to, and are thereby blinded to the fact that faithfulness in small things bespeaks fitness for great, and we seldom give it a chance of doing even decent, let alone noble work.

The unassailable position of Portmadoc slates as a roof to live under is, experience apart, amply demonstrated by hard facts and figures. The only quarrel that has ever been picked with the material is an æsthetic one. Let us not condemn the indicted slate without hearing its defence, neither forgetting that it is merely arraigned on a point of appearance, and on nothing else whatever.

If Nature has bountifully provided a material mechanically perfect for the roofing of the world's buildings, surely it is up against the world's house-designers, the architects, to devise their roofs in such manner that they are good to look on as well as to live under. In Heaven's name, what else is an architect for, but to turn the best procurable materials to the best possible account?

(To be continued.)

COMPETITION NEWS.

BIRMINGHAM.—The Baths Committee of the Corporation received the award of the assessor, Mr. A. N. Bromley, of Nottingham, in regard to the plans for the projected baths at King's Heath. His decision places Messrs. Crouch, Butler & Savage, of Newhall Street, Birmingham, first, and the premiums go to Messrs. S. N. Cooke & W. N. Twist, and Messrs. Round & Weaver.

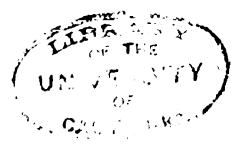
REIGATE.—Forty-four plans in competition were received by the Town Council for the laying out of the Reigate Lodge estate. Mr. Raymond Unwin, the assessor, gave the premier award of £40 to Mr. Vincent Hooper, and the second of £10 to Mr. Dann, both local gentlemen.

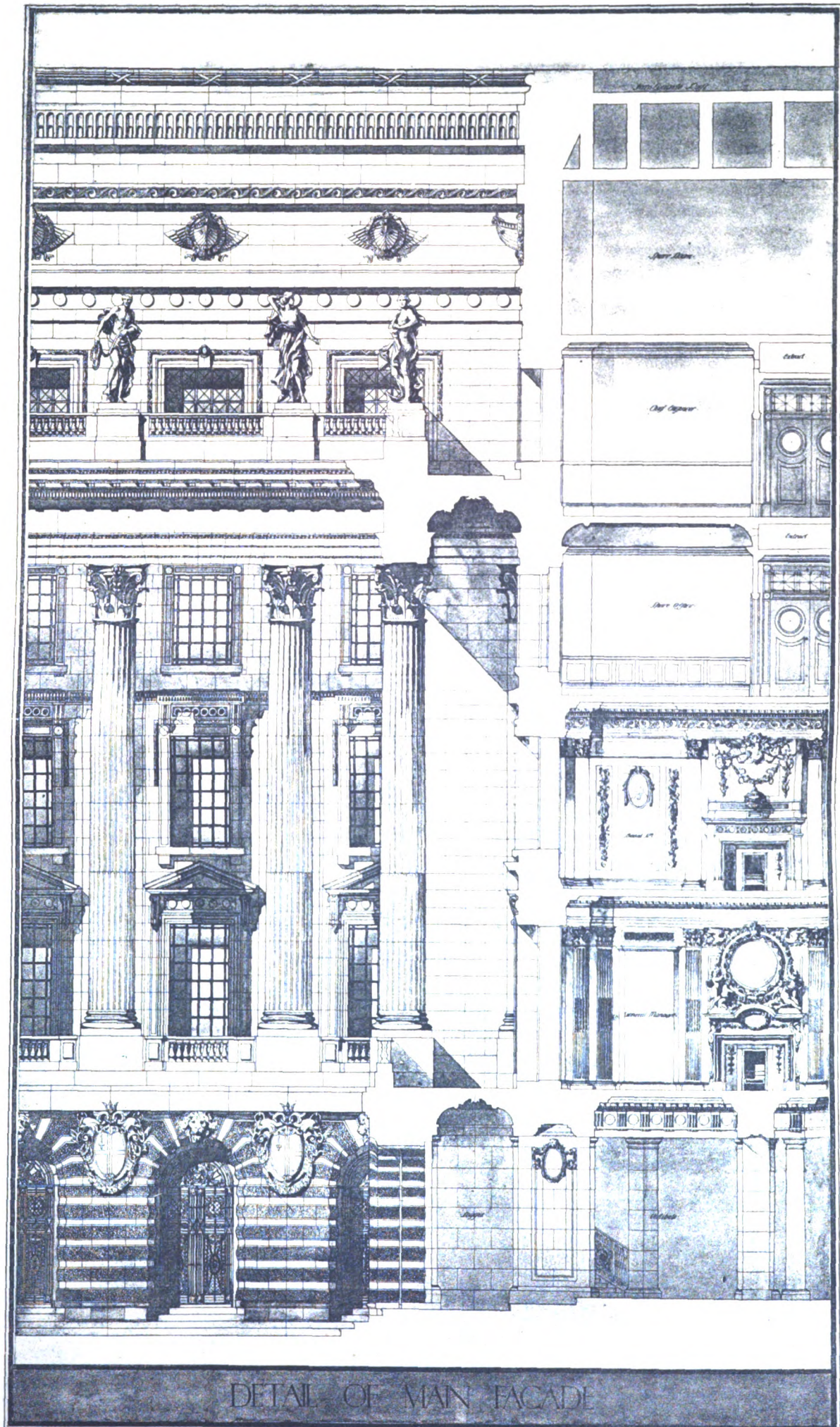
ILLUSTRATIONS.

SELECTED DESIGN FOR THE NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.

We have much pleasure in completely illustrating this week Mr. T. Edwin Cooper's masterly accepted design for the new head offices of the Port of London Authority.

THE Building Sub-committee of the Education Committee of the London County Council have had under consideration the question of expediting the architectural work in connection with the erection of new schools. They state that in view of the magnitude of the building programme for the next fifteen years they are of opinion that it is extremely desirable that the general progress of the work should be accelerated, and that, in order that this may be done, it will be necessary to engage additional draughtsmen in the architect's department. The services of ten or twelve additional draughtsmen, at a cost of £30 a week, will be required in connection with the proposed acceleration.





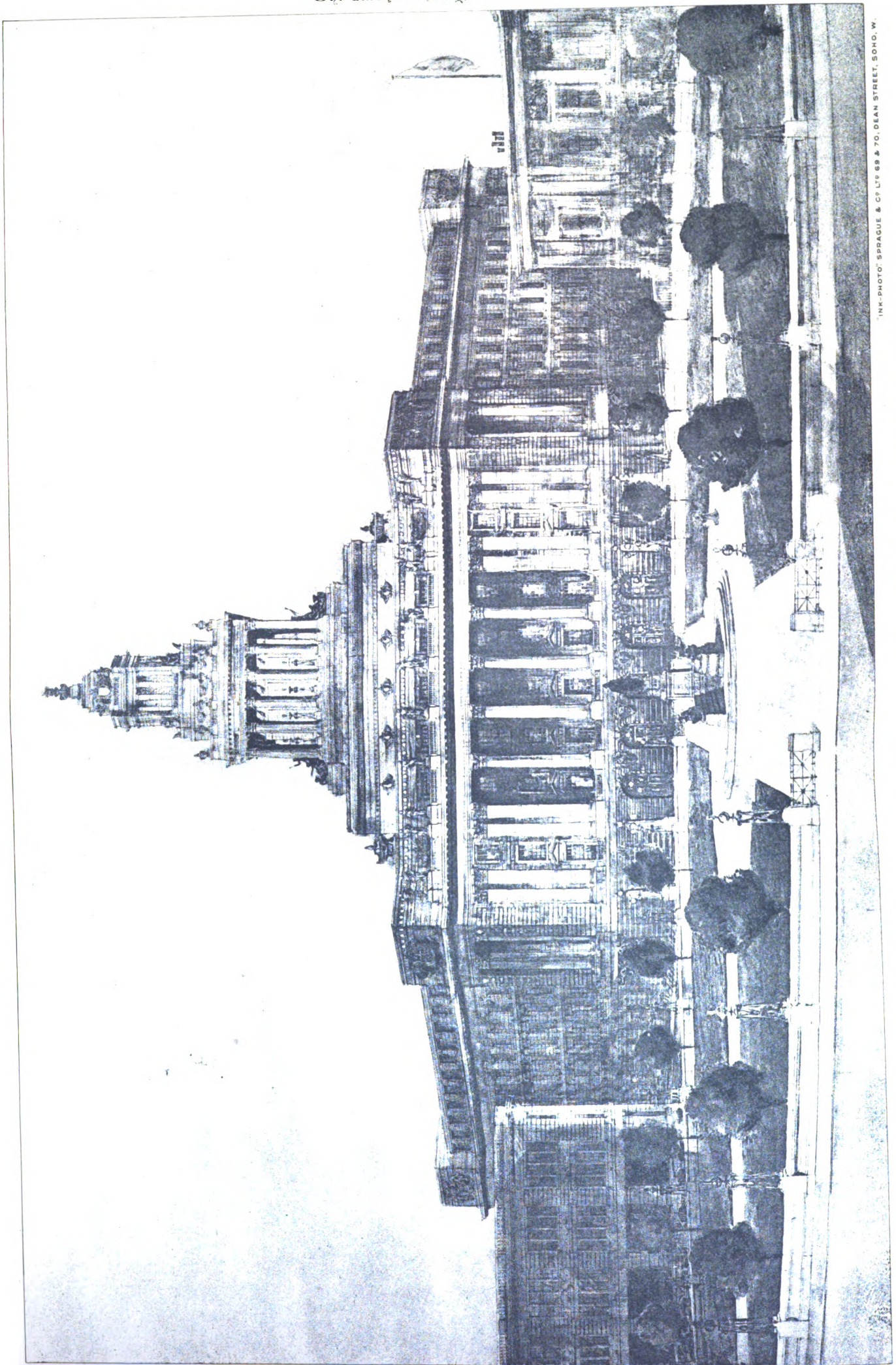
DETAIL OF MAIN FACADE

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THE SELECTED DESIGN FOR NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.

Mr. T. EDWIN COOPER, F.R.I.B.A. Architect.



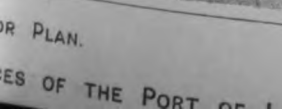


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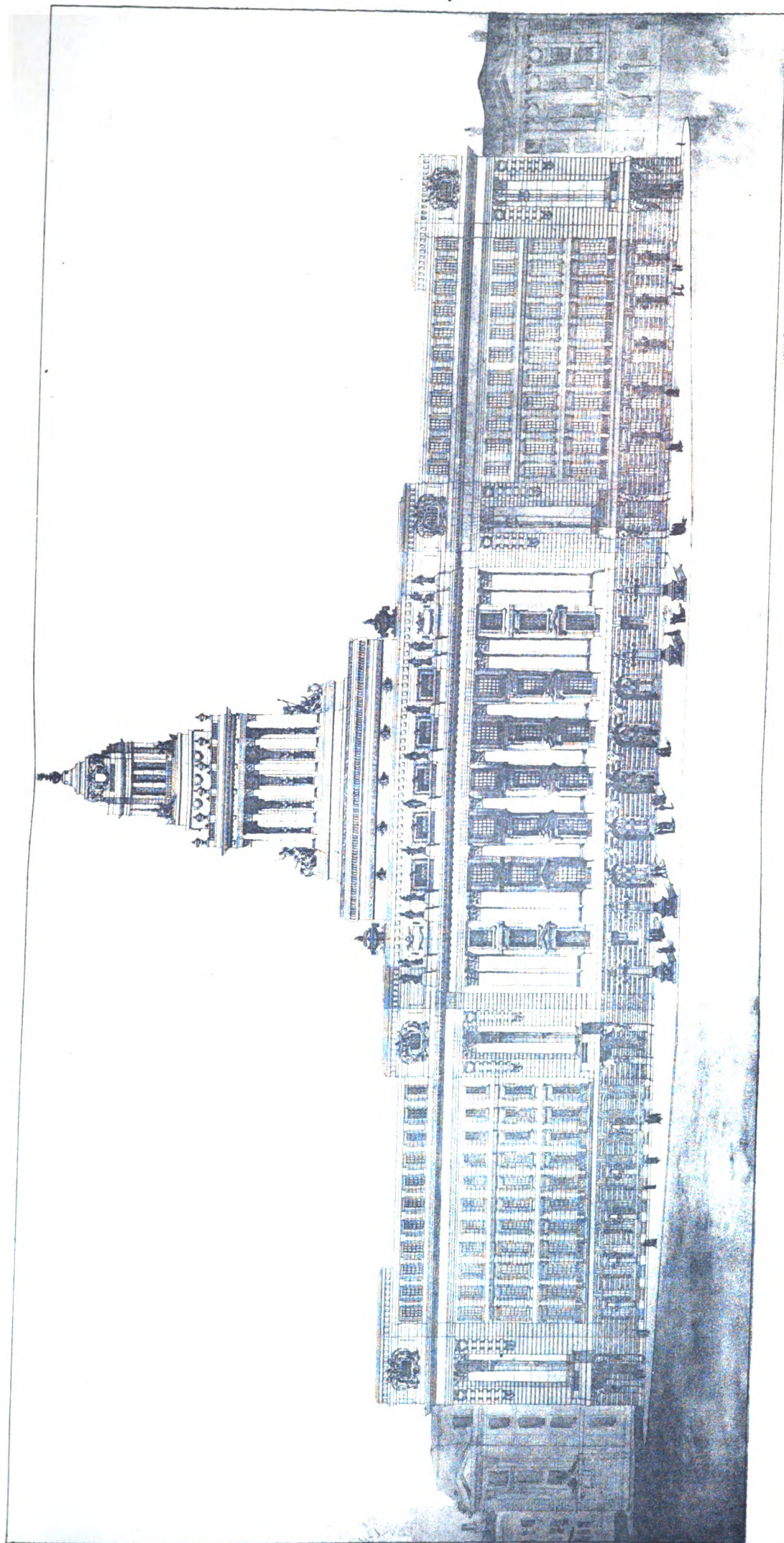
THE SELECTED DESIGN FOR NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.
MR. T. EDWIN COOPER, F.R.I.B.A. ARCHITECT.







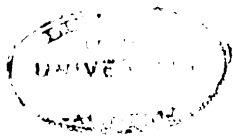
UNIVERSITY OF
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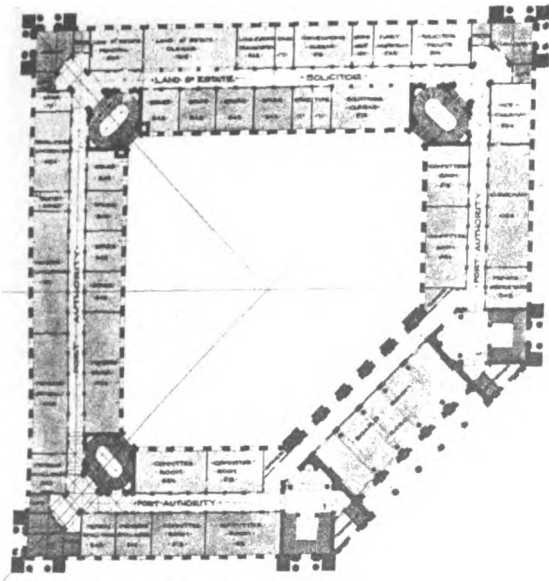
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THE SELECTED DESIGN FOR NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.

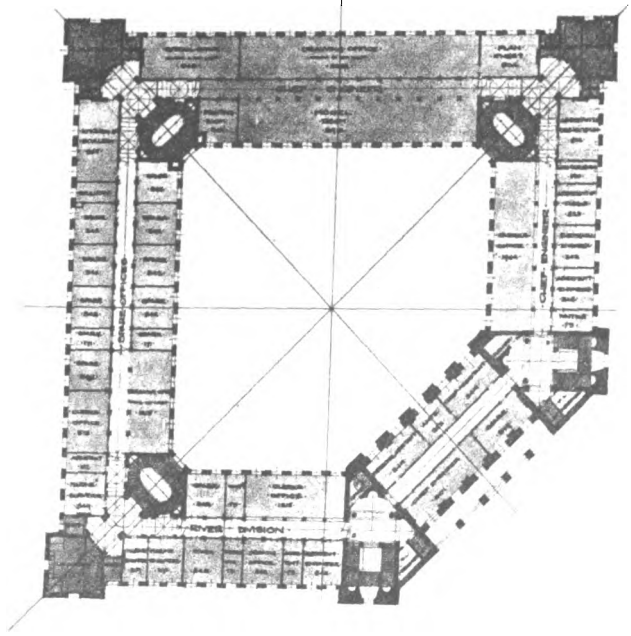
MR. T. EDWIN COOPER, F.R.I.B.A. Architect.



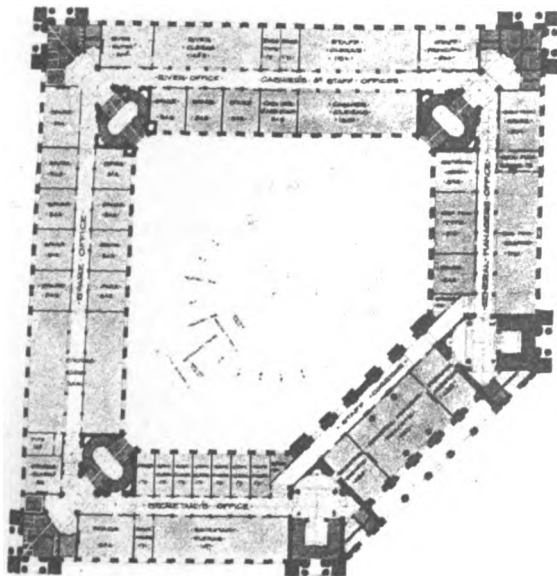
PORT OF LONDON AUTHORITY
PROPOSED HEAD OFFICES



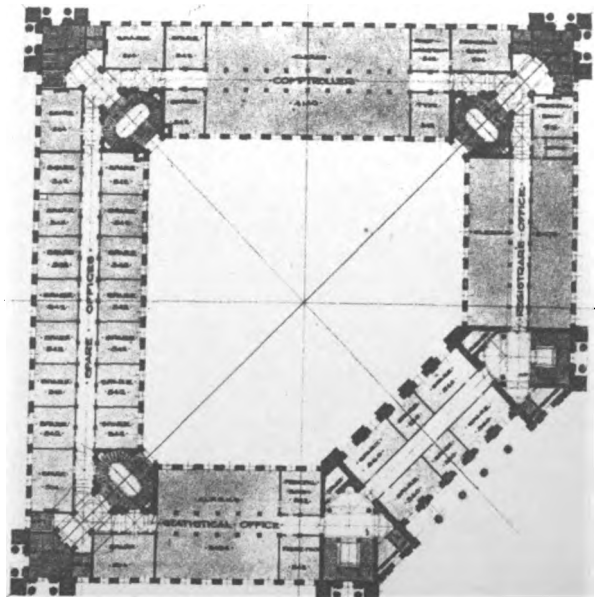
Second Floor Plan.



Fourth Floor Plan.



First Floor Plan.



Third Floor Plan.

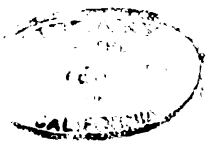


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THE SELECTED DESIGN FOR NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.

MR. T. EDWIN COOPER, F.R.I.B.A. Architect.

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ECCLESIASTICAL ARCHITECTURE IN
CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy,"
"The Cathedrals of England and Wales," "London Churches,
Ancient and Modern," "The Cathedrals of Northern France," &c.

I.—GENERAL CHARACTERISTICS.

(Continued from last week.)

WE have two influences brought out very forcibly in the churches of Central Italy. These are local and personal. The Pisan and Genoese, for instance, are distinctly local styles, in which early traditions were preserved to some extent from first to last; and, on the other hand, it is impossible not to notice the very great personal influence exercised over their descendants, as well as over their contemporaries, by some of the greater Italian architects, of whom Nicola Pisano may be adduced as the most eminent example.

There is a third influence which must be taken into consideration—that of foreign architects. San Francesco at Assisi was evidently the work of a foreigner. The interior of Perugia Cathedral bears a very close resemblance to some of the great "hall" churches of Germany. Genoa Cathedral—the west front more particularly—owes something of its peculiar character to contact with French art; and the lofty two-bayed, unclerestried eastern portion of Sant Andrea at Orvieto is decidedly Teutonic.

In mediæval times the Italians, it may be supposed, led a life more like our own at the present day than any other people. The country was populous, the cities were numerous and rich, and the people full of emulation and individuality. In England and France one of the most striking facts is the almost complete absence of anything very obviously personal in the art of the Middle Ages. The history of our old architects would be that of a race of giants, so equally matched that it is difficult to assign the pre-eminence to any one over the rest. We have had no Nicola Pisano here; our old architects' work is singularly equal in character in each period, from Romanesque to Perpendicular; and whether it was displayed in the little village church lying concealed on the banks of a rippling stream, in the vast abbey of some sequestered valley, in the great town church, or in the cathedral, there seems to be matter for equal admiration in each.

In Italy, on the other hand, we see a number of individual architects exercising each their peculiar influence, varying very much in their skill and power, and having, moreover, the doubtful advantage of a constant recollection of the works of a different style of art from whose traditions they seem never to have emancipated themselves.

Placed, in short, very much in the position that we are at the present day, they never wrought with the same absolute and joyous freedom as their contemporaries in France and England did; and thus, though their architecture may be inferior, it is of very special value to us; for we may, perhaps, see better the cause of some of our shortcomings when we investigate theirs, and so be led to emulate the excellence of the works they executed under conditions so similar to those under which we were labouring rather more than half a century ago, even if we cannot quite rival the complete perfection of the greatest mediæval architects of the North.

The first thing that strikes the student of Italian church architecture—that is to say, if he is unacquainted with that of Southern France—is the low-pitch of the roofs, a fact which had a most important influence on much of the designing. One consequence is that the roof becomes an entirely unimportant feature externally, even if seen at all, for a very flat-pitched roof does not appear in perspective. Then again, low-pitched roofs mean low-pitched gables, and these necessitated horizontal treatment, everywhere noticeable, rather than a vertical one, and so assist in maintaining the Classical traditions of the country. To this dominant horizontality is due the fact that Italian architects, while evidently particular about the lateral continuity of their designs, seldom considered it necessary to provide any vertical connection between the parts, so that buildings frequently seem to have been erected in separate storeys or features, afterwards piled upon one another.

Another thing that attracts a northern eye is the absence of buttresses. An Italian never used a buttress if by any possibility he could avoid it. If it were necessary to resist the thrust of an arch, he thought that the natural and legitimate thing to do was to put in an iron tie-rod, and he did so in the most unblushing manner. Some critics

are of opinion that while the use of the buttress led to picturesqueness and piquancy, the adoption of the iron tie-rod lent itself to refinement and repose.

In the great majority of buildings—perhaps in all cases where Classical architecture was employed—the plan is found to be exactly that of the ancient basilica or hall of justice—i.e., a parallelogram or nearly a double square, with the semi-circular or octagonal recess at one end, usually called the apsis—in the court-house, the judge's seat; but in the church, the sacred place where the altar was erected, and round which sat the bishop and presbyters. In some examples the atrium or quadrangular forecourt was retained, as at San Clemente, Rome, and San Ambrogio, Milan, and which in appearance would appear to bear some analogy to the more modern cloisters. In some of the Rhenish Romanesque churches, notably Sta Maria in Capitolio at Cologne, the Abbey Church at Laach, and the Minster at Essen, the cloister adjoins the west front of the building, and we not infrequently find an atrium before the façade of a quite late Italian church, as, for example, the cathedral at Novara and Sta Euphemia at Piacenza. In some of the later edifices we find the transept arm broken out as in a Gothic cathedral, but by far the most usual is the simple Latin plan, though some examples of the Greek plan exist; these, however, must in all cases be attributed to Greek architects, for the Latins never altered the more ancient form to which they were accustomed. This simple plan, so much preferred by the early Christian Church, may be traced through the Romanesque to the Gothic, and there can be no doubt it was the excellent basis which lies at the root of all the variations which that style engrafted upon it. This form of plan was used by the early Christians, doubtless because in many cases they found it ready presented before them in the existing basilicas, which, with little alteration of arrangement, they converted into churches; and, secondly, because its simplicity was well adapted to their wants.

This simple plan was extended and added to subsequently, though always preserved as the main principle of arrangement, particularly in the neighbourhood of Rome; as, for example, in such Romanesque churches as San Lorenzo at Orvieto, San Giovanni Zoccoli at Viterbo, and in those two remarkable churches, San Pietro and Sta Maria Maggiore at Toscanella. These and the numerous Romanesque churches in Lucca and Pistoja consist merely of a nave, aisles, and short aisleless choir, terminating in the simple apse which was never forgotten. Sometimes, however, there is no bay intermediate between the nave and the apse, a peculiarity of great frequency in the Romanesque churches of Apulia. Other apses were added at the ends of the aisles, then, where there were any, to the transepts; and as the fashion of building chapels to tutelary Saints became more in vogue, they were even introduced laterally. The cathedrals of Verona and Orvieto, where a series of shallow semi-circular apses break out from the nave aisles, exemplify this treatment.

In all the earlier instances the floor was level, except only two or three steps to the apse or tribune, where the high altar was situated, and in not a few instances the episcopal throne; but as the prejudice against burial within the consecrated walls died away, and as the Church began to build for itself, we find the introduction of a new feature in the plan, and which is treated with the utmost importance—the crypt. In the edifices now under consideration the crypt appears, not as a place of sepulture, but as a sort of lower church, complete with its altars and shrines, and supposed by some to have been erected in imitation of catacombs—those early places of meeting in which the primitive Christians were wont to hide themselves, and to carry on their simple but sincere worship. It is, however, most probable that these crypts were prepared for the reception of the bodies of confessors and martyrs, and as such were treated with as much care and attention as the rest of the church—not sunk in the earth, but often nearly on a level with the floor of the nave, and with a number of steps ascending to the choir above (which had then been removed from its first position in the nave), just as we see it at Canterbury, Rochester, and Winchester. It is thus at San Miniato at Florence, Sta Maria della Piève at Arezzo, and San Flaviano near Montefiasco, where there is a complete lower as well as an upper church. San Gregorio at Spoleto has a very remarkable crypt, about the only feature of interest in that once interesting, but now sadly "modernised," Romanesque church. This custom of building crypts and subterranean chapels was continued in the architecture of our own country until the end of the twelfth century, when it gradually fell into disuse.

In examining the features of any national school of architecture, it is worthy of notice how distinctly some of its peculiarities and prejudices are marked from the very first, even in the ground plans of the buildings it produced. This is notably the case in the ecclesiastical edifices of France, England, Germany, and Spain. Each had its special arrangement of plan, seldom departed from, and handed down from age to age as a precious heirloom. And going to Italy we find that the same feature strikes us there in almost all the buildings of the Pointed style. Their plans are all derived from two ancient types, both of which are of remarkable antiquity. It was from the basilica, converted into a church, with its nave and aisles terminated at the end by an apsidal projection from a sort of transept, that almost all the Italian Gothic churches with transepts were copied. Indeed, if we look at the ground plan of the great basilica of San Paolo Fuori le Mura at Rome, and compare it with the fully developed Gothic church of Sta Croce at Florence, we shall see that absolutely the only difference is the addition of small chapels on the eastern side of either transept; so that, in place of the one apse which marks the former, we have the central apse and five square chapels on each side of it; while in the churches, founded on the same type, of the Frari at Venice, and San Domenico at Siena, there are three; and in Sta Maria Novella, Florence, Santi Giovanni e Paolo, Venice, and Sta Anastasia, Verona, two eastern chapels on either side of the apse, all opening directly into the transepts. The church of San Clemente at Rome, dating from the fifth century, with its three aisles terminating in parallel apses at the east end, is the other type followed in such churches as the cathedral of Torcello, and, indeed, in all Italian Pointed churches without transepts. And even when, as in the thirteenth and fourteenth centuries, the Italian architects endeavoured to secure an immensely wide unbroken area of nave, as in the great churches built by the Orders of Friars Preachers at Pisa, Perugia, Siena, Viterbo, and elsewhere, they still looked back to their old precedents and finished them at the east with a short choir, very frequently square ended, and several rectangular chapels on either side of it. So that, in this respect, Italian Gothic was simply a natural development from an earlier style, and adhering very closely to the older plan and arrangements, affords us scarcely an example of those prolonged choirs of which our English cathedrals and abbeys are perhaps the most magnificent examples. But it was not only in respect of the plan that it thus founded itself upon what had before existed. The traces of Classic influence are indeed so many and so clear, that it is hardly speaking too strongly to say that Gothic art was never fully developed in Italy, so shackled was it by the ever-present influence of buildings in another style. Hence the more we study its peculiarities the more we see how curious a mixture there is in it of the character of Classic and Gothic art. When we proceed to inquire into the ecclesiastical architecture of Italy, and the domestic, which is inseparably connected with it, we cannot fail to be struck with the strongly-marked *local peculiarities* which occur in every town or group of towns. While the general system of architecture is much the same as in other parts of the world, each *city* of the present day, which corresponds to a *state* in the Middle Ages, has some characteristics of its own, due either to the material ready to the builder's hand in the neighbourhood, the genius of a local architect, or the accidental introduction, by commerce with foreigners, of novelties which ultimately became popular. Thus, the Lombard churches are for the most part constructed of red brick, the clay for which was dug out of the great plain on which they stand. The Florentines covered theirs with an incrustation of green, yellow, and other coloured marble, which was quarried near their city. The Siennese, again, had recourse to red brick and ornaments of terra-cotta, which abounds in that part of Tuscany. At Florence, moreover, the whole architecture, since a certain period, bears the stamp of the genius of Arnolfo; at Siena, of Agostino and Agnolo, two architects who worked for the Republic, and constructed its chief public buildings. These differences often manifest themselves, not so much by some great or startling divergence from what is usual in point of plan, as in a peculiar fashion of mouldings or capital.

For ages our English architects had no eye for colour. This fault was generally admitted, and suddenly everyone strove to atone for it by the introduction of natural polychromy in all directions, most of which was supposed to be founded on Italian examples. Such hot haste was dangerous, for if there is one lesson taught more forcibly by the Italian Gothic churches than another, it is that where

colour is introduced it must be done thoughtfully, and with a full sense of the increased danger of failure in works which its use involves. It should be borne in mind that though bad architecture is sad work, bad architecture badly coloured—and what fearful examples does modern English Gothic present of this!—is more than doubly sad, and that there can be no greater error than to suppose that the introduction of colour allows less attention to be paid to form than, or even as little as, before.

The very first thing that strikes the eye on visiting Italian buildings of the Middle Ages is the extensive use of what has received the name of constructional polychromy. Its highest development is, of course, where marbles of different colours are used in the actual construction of the buildings, as in the cathedral and campanile of Florence, and the cathedrals of Genoa, Orvieto, and Siena. The mass of the work at Florence is of white or veined marble, but it is interstratified and panelled in certain portions with red and dark green marbles; in addition to which, the parts are enriched by inlaid patterns in marbles of exquisite colours, the whole forming the most delightful combination of hues which can well be imagined.

At Siena Cathedral the materials are white (or veined) and black marbles, which are for the most part alternated in equal proportions. Here the effect is hardly so satisfactory as what we see at Florence; the contrast is too crude, and the proportions of dark and light colour unpleasing. This was, however, corrected in the great addition commenced against the south transept, but never completed, where the colours have only one course of black to four of white, with a slight addition of inlaying; and here the effect is exceedingly fine and harmonious. In the east end also the proportion of white and black courses, and of inlaid pattern, is very pleasing. This is a fact worthy of mention, because, whenever this mode of decoration is attempted, it is of the utmost importance that the proportions of the different colours be most carefully weighed and studied.

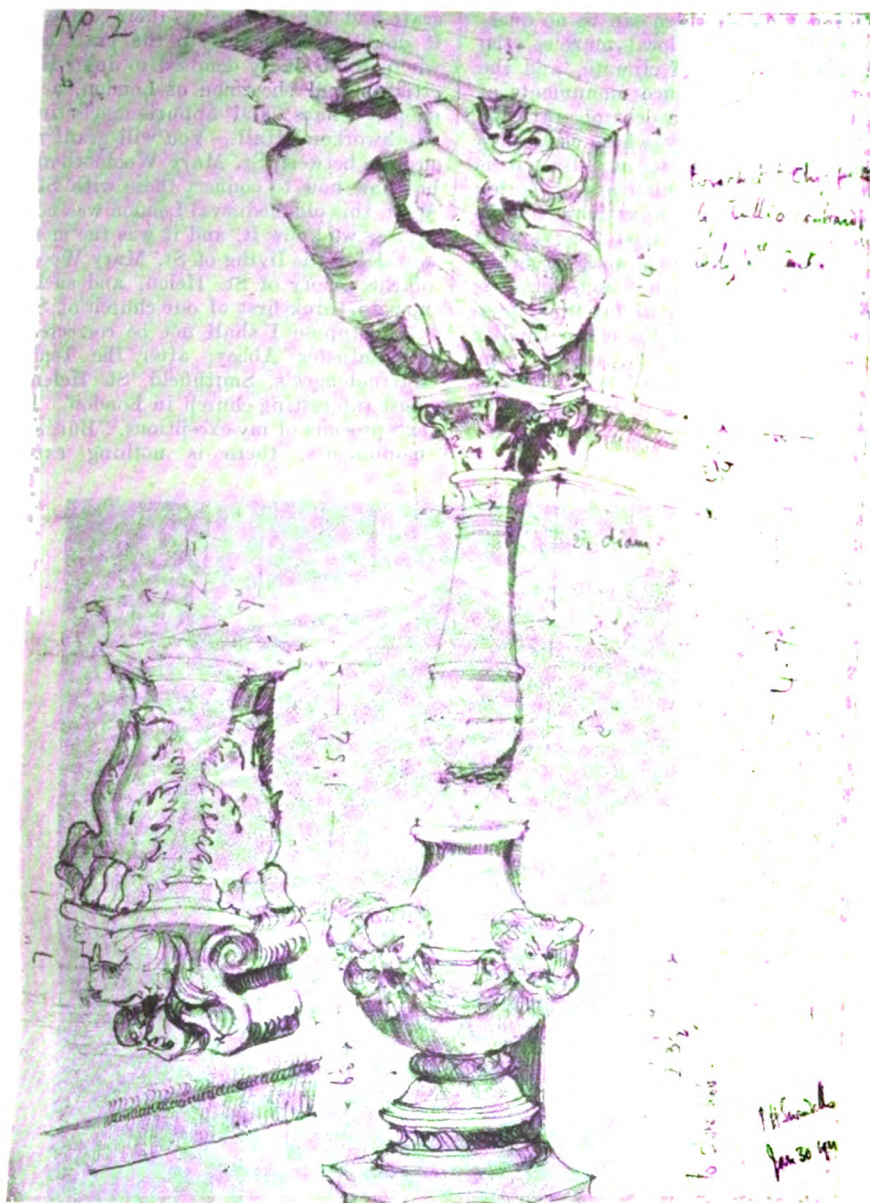
In the Romanesque San Miniato at Florence it may be observed that the constant use of an inlay of coloured marbles, so prevalent in that city, arose naturally out of the usual tendency of the builders of whatever neighbourhood to make use of the materials ready to hand in its vicinity. Thus, the Istrian marble supplied Venice; Broccatello, of a red and orange colour, Verona; Verdi di Prato was extensively used by the Florentines; while other marbles are Luini (ancient Etruscan); Rosso di Levanté, Porto Venere (black and gold), Carrara, Pavonazetto, and Breccia, and Verde and Rosso, from Polcevera.

The environs of Florence were rich in marbles of different kinds, and hence the temptation, when prosperous times and days of high culture set in, to make use of such materials largely in order to produce a rich and sumptuous effect. It would perhaps be unreasonable to complain of an exaggerated use of a special material when it has resulted in the creation of almost a special class of architectural design peculiar to the Florentine district; otherwise it might be said that the Florentine architects would have produced a more monumental and more strictly architectural effect had they restricted their use of these marble inlays to the less constructively important parts of their buildings, marking the construction by plainer and more massive materials.

The façade of San Miniato is, of course, entirely altered from its original form by this addition of incrustations in a later day; the old basilica, in fact, underwent successive changes in the course of generations as one artist after another brought his contribution to it. Happily, this was when Florentine art was in the hey-day of its existence, and the solemn old Romanesque basilica could hardly but benefit by any additions made to it in such an age; but, for all that, it is questionable whether the variegated panelling of the façade is not rather discordant with the austere contours of the old building.

In Sta Croce—one of the several works by Arnolfo di Lapo which adorn the city of Florence, and in style a simple edition of that of the cathedral—the treatment of the modern façade is remarkably satisfactory and harmonious, but there is all the difference between a building designed from the first in this style and a building of older date and simpler style to which the polychromatic decoration has been added.

The use of marbles of different colours for detached shafts and pillarlets is a universal feature in Italian architecture, and is a system of decoration peculiarly open to ourselves from the great variety of rich material now at our disposal. The façade of Lucca Cathedral is a beautiful instance of this, but it is in two pillars at the west end of the nave of Genoa Cathedral that the skill of the Italian artist in



FROM SKETCHES SUBMITTED BY MR. F. H. SWINDELLS FOR PUGIN STUDENTSHIP, 1912.

constructional polychromy is perhaps more clearly and beautifully enunciated than elsewhere. These pillars, which support the arches of a constructional gallery running across the west end of the cathedral, are of a later date (c. 1300) than the church in general, and are so beautiful in their detail that, without any wish to disparage Italian architecture, the first involuntary impression of the writer was that they must have been designed by a French artist. Of whatever nationality he was, the designer of these columns made himself perfect master of the Italian material. The pillars consist of an octagonal nucleus of plain stone, nearly concealed by twenty-four shafts which surround it. These are most artistically arranged, both in position, size, and colour. Those occupying the four cardinal faces of the nucleus are 1 foot 5 inches in diameter, and of a rich mottle of crimson, green and white. Those on the diagonal faces (11 inches in diameter) are alternately of white and black, and between these and the great shafts are, in each interval, two smaller shafts ($6\frac{1}{2}$ and $4\frac{1}{2}$ inches in diameter), also black and white, but the colours counterchanged, so that on two sides we have three white and two black and on the others three black and two white. The richly-carved capitals are white, the abacus having a carved cresting of dark marble, the bases (supported by stiff foliage) are of a mottle of black and crimson on a light-coloured plinth. The whole is unquestionably one of the most beautiful combinations of colour to be seen anywhere, and much the same may be said of the three exquisite western portals of the same cathedral, evidently designed by the same hand. The details are for the most part purely French, as is the general design, but the use of polychromatic materials is carried to its fullest extent, as also is the use of that beautiful Italian feature,

the twisted column and moulding. In one of these portals the larger detached shafts are alternately of green and dark mottled marbles; the smaller ones of a red mottle and black. They are placed against a flat splayed jamb of great depth, which is formed of alternate courses of dark and light marble, the light courses being each inlaid with small pattern-work. The bases are white, with the beautiful French enrichment of supporting leaves; the plinth is in courses of various colours, inlaid, dark upon white, and white upon dark. The stones of the arches are alternately dark and white, but in some of the orders the individual bowtills are cut out, and black or white inserted, counter-changing in each course—an exaggeration, perhaps, of the principle, as it infringes a little upon the construction. On the whole, these western parts of Genoa Cathedral are among the most valuable specimens of the art of natural polychromy to be met with in the peninsula, and illustrate the principle of enriching Northern Gothic with Italian ideas, but doing so without infringing upon its essential characteristics.

In the Umbrian churches, as, for instance, those of Arezzo, Assisi, Cortona, Perugia, and Spoleto, stone of a most grateful sepia colour is extensively employed, marble being used for the shafts of portals, windows, and other decorative features. This material is something like our Northamptonshire ironstone, but of a lighter and more delicate hue. Those who know their Perugia and Assisi will recollect those beautiful veneers consisting of rows of ornaments in red Perugia marble and white stone, arranged in the form of a quatrefoil imposed upon a square, that line the exterior walls below the windows in the cathedral of the former, and those of the chapels on either side of the lower church of St. Francis in the latter.

Of the great merit to be found in the architecture of the Middle Ages in Tuscany and Umbria there can be no question; the adventitious aid of beautiful local marbles, the skill of great Italian artists, the effect of climate, and the chisel of the sculptors combined to produce monuments of art singularly grand and imposing, and a debt of gratitude is justly due to those great architects by whose skill such excellent illustrations are handed down to us. But it is still questionable whether the merit of this class of Gothic buildings equals the beauty and fitness always found in the magnificent buildings on this side of the Alps, for, viewing the forms of Central Italian Gothic buildings apart from the advantages of the beautiful material with which they are erected, or their walls encrusted, it may still fairly be questioned whether they are equal to either the French or English examples. There is often a want of purity in their compositions, and some strange admixture of Classical details, which destroys the harmony so remarkable in the best buildings of France and Germany.

(To be continued.)

but history affirms, unfortunately, that the followers of this craft had Whitechapel as their centre. But, in spite of this, it doubtless appealed to the craft as a happy occurrence when John Badly demised to John Hungerford and others, citizens and sheermen of London, a tenement or mansion, shops, cellars, and appurtenances in Minchin Lane, now Clothworkers' Hall. You will grant me, then, a ready connection between St. Mary Woolnoth and Clothworkers' Hall, but how now to connect these with St. Helen, Bishopsgate? Well, this old mediæval London was not the vast and complex city as we know it, and it was the most natural thing in the world for the living of St. Mary Woolnoth to be in the gift of the priory of St. Helen, and such was the case. And now to think first of our church of St. Helen, Bishopsgate.

I suppose I shall not be corrected if I say that, after Westminster Abbey, after the Temple Church, after St. Bartholomew's, Smithfield, St. Helen, Bishopsgate, is the most interesting church in London. Possibly some will even except some of my exceptions. But, after all, apart from its monuments, there is nothing extraordinary about the



DOORWAY ON SOUTH SIDE, ST. HELEN, BISHOPSGATE.—From a photo by Mr. H. F. MURRELL.

ST. HELEN, BISHOPSGATE, AND ST. MARY WOOLNOTH.*

THERE may at first sight appear to be little connection between the places we have visited this afternoon; and, indeed, to tell the whole truth, I fear their choice was largely accidental. I find it possible, however, to trace a certain connection between what might appear such dissimilar objects as a Benedictine priory church, the hall of a wealthy city company, and a late Renaissance church of somewhat clumsy proportions.

There has been considerable dispute as to the origin of the name of our last church, St. Mary Woolnoth and St. Mary Woolchurch Haw, but it is generally granted that these names had their origin in the proximity of these churches to the place where wool was weighed.

Now, it would be easy to assume that the clothworkers naturally worked in the neighbourhood of this wool market,

church. There must have been fifty, there may have been one hundred, churches equally interesting which we could have visited had it not been for the inevitable but irretrievable accident, "the Fire."

It is possible, with the aid of imagination, to connect this church with the very origins of Christianity as a State religion. Its dedication in honour of the canonised Empress Helena, the mother of Constantine, by itself points to an early origin. Helena is frequently claimed as a British lady, daughter of Coel II., Prince of the Trinobantes, but more probably she was a native of Nicomedia, in Asia Minor. The tradition that the original church of St. Helen was founded by Constantine in pious memory of his mother must be accepted with reserve.

For the first certain record of the church we must come to the year 1010, and this incident is confirmed by a record preserved in the archives of the church.

It is a fascinating story. Picture, first, the invasion scare caused by the landing of the Danes in East Anglia; then Alwyne, Bishop of Helmeham, conveying the precious

* Read at a meeting of the Upper Norwood Athenæum, by H. F. Murrell, A.R.I.B.A.

remains of King Edmund the Martyr from Bury St. Edmunds to the church of St. Helen; then the patient vigil of three years while they are guarded for sanctuary in this church.

It is evident that subsequent to this the church was in the gift of the Dean and Canons of St. Paul's, who granted it to one Ranulph and Robert his son.

But the next event of importance occurred in the reign of King John, when the Dean of St. Paul's, Alardus de Burnham, gave permission to William, son of William the Goldsmith, to found a priory of nuns of the Benedictine Order. It is interesting to note that from this William are descended the Earls Fitzwilliam.

Next, in 1308, William de Basing, Sheriff of London, became a most munificent patron of the church, being, in consequence, considered almost a second founder. Doubtless as a result of this generosity the convent flourished exceedingly, becoming possessed of much valuable property in the City.

also in the same wall the two curious recesses, the use of which is a matter for much speculation. With regard to the date of the church, the second arch of the main arcade from the east and part of the chantry at least are of thirteenth-century date, the eastern chapels being built about 1354, and the remainder toward the middle of the fifteenth century, probably the result of Sir John Crosby's generosity.

The crisis of the history of St. Helen's came with the dissolution of the monasteries in 1538, at which time the income of the convent was equal to £10,000 in present money. Following on this haul, King Hal bestowed the conventual buildings on Sir Richard Williams; in 1542 they passed to the Company of Leathersellers, who used the refectory as their hall till 1799, when the conventual buildings were pulled down to form St. Helen's Place.

The church has suffered many restorations, the most productive being that under Inigo Jones in 1631.

The fine work of the entrance porches and doorways at the south and west, and possibly the pulpit, may be attri-



CHURCH OF ST. HELEN, BISHOPSGATE.—From a photo by Mr. H. F. MURRELL

From Prioress Alice Assfeld in 1466 Sir John Crosby obtained a lease of the site of his mansion, so famous since its resurrection in Chelsea.

It is most happy that the memory of this great citizen should be preserved in the very beautiful tomb on the south side of the altar. The very fine effigies of Sir John and Dame Anne, his wife, give some idea of the dignity and knightliness of this great City man.

But we must now trace the effect of the conventual buildings on the general plan of the church. The first thought of anyone entering St. Helen's must be, Which is the nave and which is the aisle? As a matter of fact, though it may sound rather Irish, both the aisles are naves. The southern aisle is the parochial nave, 24 feet wide; the northern aisle is the nuns' nave, 26 feet 6 inches wide. There was dividing these two in pre-Reformation times a screen, removed on the dissolution of the priory. An interesting evidence of the use of this nuns' nave is the arched entrance doorway on the north wall and the curious six-light hagioscope further east to give a view of the high altar from the cloisters during Mass;

but to Inigo Jones, under whose direction a sum of no less than £1,300 was spent.

In 1744 the parishioners, with mistaken generosity, subscribed to erect a west gallery with an organ; in 1865 a more enlightened committee removed the same gallery, and placed the organ in the south transept.

In 1873 the benefices of St. Helen, Bishopsgate, and St. Martin Outwich were united. As a result of the removal of the eighteen principal monuments of St. Martin Outwich, St. Helen's is remarkably rich in monuments. It has been designated "the Westminster Abbey of the City." I will endeavour to concentrate on a few of the most remarkable of these.

To proceed chronologically, there are in the floors of the chapels eight brasses.

A merchant and his wife, dating about 1400.

A lady of the time of Henry VII. in elaborate robes, probably a Lady Abbess.

John Briéux, rector of St. Martin Outwich, 1459.

Nicholas Wotton, rector of St. Martin Outwich, 1483.

Thomas Williams, gentleman, and Margaret, his wife, 1495.

John Leventhorpe, Keeper of the Chamber to Henry VII. 1510.

Robert Rochester, Sergeant of the Pantry to King Henry VII., 1514.

Thomas Benolte, Clarencieux King-at-Arms, A.D. 1533 (lost).

In the Lady chapel is also the early monument of Sir John De Oteswich, of early fifteenth-century date.

He was connected with the foundation of St. Martin Outwich, from which church his monument was moved in 1874.

To quote Stow on the subject:

"On the south part of Which Street (Threadneedle Street), beginning at the east, by the well with two buckets now turned to a pump, is the parish church of St. Martin called Oteswich, of Martin de Oteswich, Nicholas de Oteswich, William Oteswich, and John Oteswich, founders thereof." He continues that John Oteswich and his wife were buried "under a fair monument on the south side."

The monument of Alderman Hugh Pemberton, 1500, is another of the removals from St. Martin. He appears to have been a dignitary of the City, merchant taylor, and Sheriff in 1490. His effigy, and possibly that of his wife, has disappeared.

Next in antiquity comes Sir Andrew Judde, represented in armour kneeling. He was Sheriff in 1544 and Lord Mayor in 1550; also Lord Deputy and Mayor of the Staple of Calais. He seems to have made his fortune trading in furs in Russia and Muscoua. Hence his inscription:

To Russia and Muscoua,
To Spayne, Gynny, without fable,
Travelled he by land and sea,
Both mayre of London and Staple.
The Commonwelthe he norished
So worthe in all his days,
That ech State full well him loved,
So his perpetuall prayers.
Three wives he had; one was Mary;
Fower sunes, one mayde, had he by her.
Annys had none by him, truly;
By Dame Mary he had one dowghtier.
Thus in the month of September,
A thowsande, five hundred fifye
And eight died this worthe stapler
Worshipynge his posteritye.

And now we come to a very fine series of Elizabethan and Jacobean monuments. The earliest of these, and, indeed, one of the finest Elizabethan monuments in the country, is that of Sir William Pickering. This distinguished knight, scholar, and soldier appears to have served no less than four Sovereigns—Henry VIII., Edward VI., Mary, and Elizabeth, the latter as Ambassador at Madrid. His effigy is a fine illustration of the dress of the period. Here he lies clothed in armour, with trunk breeches and the distinguishing neck ruff.

In the centre of the Gresham Memorial Chapel at the extreme east of the nuns' nave lies the altar tomb of Sir Thomas Gresham. From the corner of the adjacent window hangs a helmet, reputed to have been carried at his funeral.

The greatest merchant of his time, his name is perpetuated as the founder of Gresham College and the Royal Exchange. The only grudge St. Helen's can bear against him is that in his will he appears to have omitted to provide for the new steeple which, according to Stow, he promised to build in recompense of ground in their church filled up with his monument.

Slightly later in date is the monument of Alderman John Robinson, 1599.

These must have been great and prosperous days, free from all anxiety over the decline of the birth-rate. In the left panel kneels Alderman John and his nine sons; in the right kneels Christian, his wife, and her seven daughters. "They spent together," we are told, "thirty-five years in holy wedlock, and were happy besides other worldly blessings in nyne sonnes and seaven daughters."

But we must not forget Sir Julius Caesar Adelmare—indeed the type of man who does not allow himself to be forgotten. His Latin inscription has been translated thus:

"To all faithful Christian people to whom this writing may come. Know ye that I, Julius Adelmare, alias Caesar, Knight, Doctor of Laws, Judge of the Supreme Court of Admiralty of Queen Elizabeth, one of the Masters of Requests to King James and of his Privy Council, Chancellor

of the Exchequer, and Master of the Rolls, by this my act and deed confirm with my full consent that, by the Divine aid, I will willingly pay the debt of Nature as soon as it may please God. In witness whereof I have fixed my hand and seal. February 27, 1634."

It is interesting to note that the seal is represented as severed from the deed.

The monument of Sir John Spencer has special interest for us this afternoon, as he was Master of the Clothworkers' Company, and in 1594 Lord Mayor of London. He seems to have gone by the name of "rich Spencer," on account of his vast fortune. From him is descended the Marquis of Northampton.

It is impossible to mention half the monuments of this wonderful church, but we must just remember that of Francis Bancroft, who must have been as much a character in his way as Julius Caesar Adelmare. He erected during his lifetime a large, ugly, and very-much-in-the-way tomb, provided with hinged cover to facilitate a periodical inspection of the embalmed corpse, with this inscription:—

"The ground whereon this tomb stands was purchased of this parish in MDCXXIII. by Francis Bancroft, Esq., for the interment of himself and friends only, &c."

The officials of the Drapers' Company, to whom the pleasant duty of a periodical inspection of Mr. Francis Bancroft fell, stuck gallantly at their task for some time, but Mr. Bancroft's embalmer had played him false, and the duty became impossible. At the last restoration his large tomb was removed.

Much as we would like to linger over St. Helen's, if not over Bancroft, we must move on to

Clothworkers' Hall.

"The grandeur of England is to be attributed to its golden fleece, the wealth of the loom making England a second Peru, and the back of the sheep, and not the extracts of the earth, being its chief mine of riches."

Some of us, still conscious of the inconvenience of a coal strike, will hardly agree, so far, with Mr. Elkanah Settle, but all of us must acknowledge a debt to the clothworker and, incidentally, to the sheep of the golden fleece.

Though ranking as the twelfth and last of the great Livery Companies of London, it is in its origin one of the most ancient and, indeed, one of the most useful and powerful of the companies. There are many of the companies associated with the clothing trade—the Drapers and the Merchant Taylors, for instance. The Clothworkers were formed by the union of the Guilds of the Fullers and Sheermen, who, in their turn, were derived from the ancient Anglo-Norman Guild of Tellarii, or Wool-weavers. The Weavers were ultimately absorbed into the Drapers and Merchant Taylors.

We must recognise that the large connection of the clothing trade of this country with the Continent is of ancient origin; the latest creation of Paris in hats and otherwise has always been an English hobby. Hence this trade was peculiarly in need of some form of protection, the wise oversight of a union to insure that alien goods and alien workers should conform in some measure to British standards. It was, as already mentioned, in the reign of Henry VI. that John Badly demised to John Hungerford and others, citizens and Sheermen of London, a tenement or mansion, shops, cellars, and appurtenances in Minchin Lane. Edward IV. granted "to his beloved lieges to found, to the praise and honour of God, and the most glorious Virgin Mary His Mother, a certain fraternity or perpetual of the men of the mystery of Fullers."

"Unto his beloved lieges, men of the mystery of sheermen," King Henry VII. granted a charter of incorporation.

The charter of 19 Henry VIII., January 18, 1527-8, commences by rehearsing the circumstances under which Henry VII. and other Sovereigns had previously accorded privileges to the Sheermen and Fullers, and proceeds to transfer and change the two guilds into "the name of one master and four wardens of the Guild or Fraternity of the Assumption of the Blessed Virgin Mary of the Art or Mystery of Clothworkers of the City of London." It also provides, among other things, for the exercise of a common right of search over aliens' denizens and punishment of offenders or defaulters according to the law of England or the custom of London in all matters pertaining to the mysteries of Sheermen and Fullers, &c. It is interesting to note that females have always been entitled to the freedom of this company. I wonder if the Glassworkers have a similar open door to the fair sex.

An old dispute as to precedence in the Lord Mayor's procession was settled in 1518 by Sir William Boteler, Lord Mayor, who decided "that the Sheermen should ride first,

and that the Dyers should lovingly and charitably follow the fellowship of Sheermen without any further strife or debate."

Amongst the ordinances of the company commencing 1531-2, the following, amongst other subjects, are dealt with: Election of officers, livery of clothing, rendering of accounts, relief of necessitous brethren, and their burial out of the common box, dirges and masses for their souls, the attendance of members at the obsequies of a brother "in their best apparel." There are also provisions regulating details of work and hours of attendance, and forbidding men of the mystery to play at unlawful games. In 1607 King James I. was made a freeman. When entertained at the hall His Majesty was pleased to drink to the Lord Mayor, Sir William Stone, and the rest of the company "by the name of his good brethren the Clothworkers, praying to God to bless all good clothworkers and all good clothwearers."

And now we are coming to great and stirring times. A minute of the Court dated September 7, 1643, reads:—

"This day also this Court, taking into their sad and serious consideration the many great, pressing, and urgent

Pepys' note of September 6, 1666, is interesting. "Strange it is to see Clothworkers' Hall on fire these three days and nights in one body of flame, it being the celler full of oyle."

The building which succeeded the one destroyed by the Fire seems to have been worthy of the company. Hatton in his "New View of London, 1708," describes it as a noble, rich building. "The hall is a lofty room adorned with wainscoting to the ceiling."

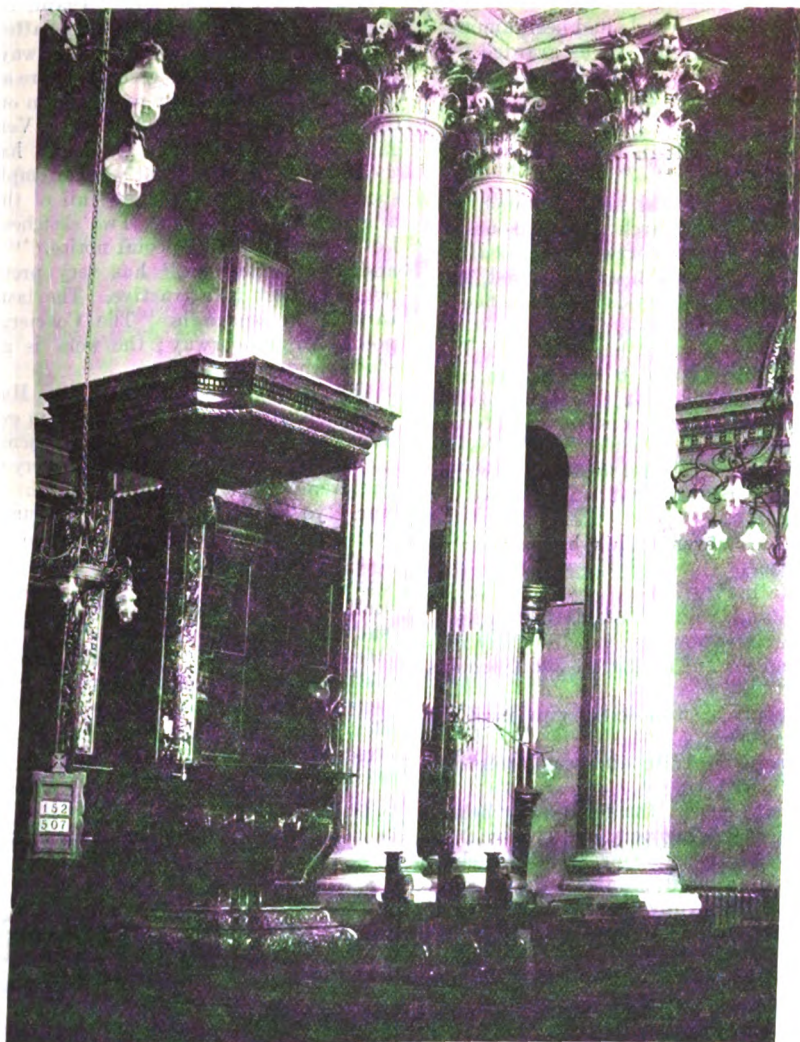
This old block was taken down in 1862.

The company has had many distinguished masters.

William Lambe, a suitable name for a Master of Sheermen, was Master in 1569-70. Lamb's Conduit Street is named after him.

Sir John Spencer, whose monument we have already noted at St. Helen's, and, greatest of all, Samuel Pepys, the famous diarist and Secretary to the Admiralty, who signalled his year of office by presenting the company with its treasured loving cup.

A word in conclusion as to income and good works. The total income of the company is about £60,000. Out of this



INTERIOR OF ST. MARY WOOLNOTH.—From a photo by Mr. H. F. MURRELL.

occasions which they have for money, as well as for the payment of their debts as otherwise, and considering the danger this city is in by reason of the great distractions and civil wars of this kingdom, have thought fit and so ordered that the stock of plate which this company hath shall be forthwith sold at the best rate that will be given for the same."

A subsequent Court minute shows that 2,068 ounces of plate were sold, which realised £520, and 1,239 ounces were retained for the use of the company. The rose-water dish given by John Burnell, Master, in 1593, survived this crisis.

Then, again, later the records of the company reflect contemporary history in 1660, when an item appears "to put out and remove the arms of the Commonwealth from all things belonging to the company, and to set in their stead the arms of His Majesty."

There is an old map of London published by Agas about 1560, which shows Clothworkers' Hall before the Fire. Evidently it was rather fine. In the stained glass windows of the refectory, we are told, were the arms of ten Lord Mayors and sixteen Sheriffs who belonged to the fraternity.

income many exhibitions and scholarships to the Universities are made. The amount of its subscriptions to technical education is about £4,000 annually. But the company has particularly interested itself in the higher education of women and in the care of the blind. It supports nearly 1,000 blind pensioners receiving from £5 to £20 each.

It is altogether a fascinating history, a movement originating in the ancient Guild of Fullers gathered at Whitechapel, round the field where grew the Fullers' teasel, developing into the larger company for trade protection, flourishing under Royal patronage till it becomes the great company whose good works for beneficence and for the progress of industry touch a thousand lives and assist a thousand progressive interests.

St. Mary Woolnoth.

Here we are right at the heart of the City, surrounded by all the throb of its life, splashed by its motor-buses, shaken by its tube railways. "Near to the place where wool was

weighed, a beam in the churchyard," says Stow, "can you see the bales dragged in from the country across quaint old London Bridge. Right at the corner of Lombard Street can you see the dark-skinned Italians from Lucca, from Florence, from Venice, who came here with their bills of exchange when the Jews were driven out from Old Jewry in the thirteenth century."

It is the Lord Mayor's Church, they say, and no wonder, for St. Mary Woolchurch Haw probably stood on the site of the Mansion House.

Of the original foundation of the church nothing is known.

"In the year 1438 it was rebuilt," Newcourt says, "from its very foundations." This rebuilding does not seem to have been completed till the end of the century, as Stow says, "Sir Hugh Brice, Goldsmith, Mayor in the first year of Henry VII., Keeper of the King's Exchange at London, and one of the Governors of the King's Mint in the Tower of London, built in this church a chapel called the Charnell, as also part of the body of the church and of the steeple, and gave money toward the finishing thereof, besides the stone which he had prepared."

The living, which, as already mentioned, had been among the possessions of the Priory of St. Helen's, was granted by Henry VIII. to Sir Martin Bowes, whose mansion stood adjacent. His visor, gauntlets, and spurs are preserved in the case in the church.

This old Gothic church, first rebuilt in 1442, was altered and almost entirely rebuilt in 1620.

From this it would seem that we did not lose much by the Fire, though Stow speaks of the church as "reasonably fair and large." Naturally, they were short of churches after the Fire, and in 1677 St. Mary Woolnoth was repaired, the sides, roof, and part of the ends having been "damned" in the Great Fire.

Malcolm also gives particulars of what happened. "The north wall fronting Lombard Street and 6 feet of the east wall were erected. All the remainder of the walls of the old church were left ruinous, in order to render the interior fit for Divine service as speedily as possible; but the very consequence of this haste became visible before 1711, in which year the parishioners were apprehensive of being buried by its fall."

Wren was a generous critic, even to his brother architects, a sign of supreme grace.

Thus reads his "Parentalia":

"The steeple was old, and wanted rebuilding, which, together with the whole church, is now very substantially performed by the ingenious and skilful architect, Mr. Nicholas Hawksmore."

Very substantial is certainly a suitable description of the twin towers.

The rebuilding commenced in 1716, and was completed about 1719.

The plan of the interior is clever, the twelve Corinthian columns in groups of threes proving very effective without interfering with the value of the interior as a preaching church. The four semicircular windows above the entablature light the church in a very happy manner. The wood-work of pulpit, organ, and gallery fronts is good. The galleries were removed at a late restoration, and the pilasters now stuck against the wall are of questionable decorative value. The organ built by Schmidt was removed to its present position when the galleries were removed.

Cowper's friend, John Newton, once "infidel and libertine," was rector of the united parishes for twenty-eight years.

There are interesting documents now hanging on the south wall of the church. The most ancient dates from about 1290, bequeathing a small sum of money to the church. Externally it is a striking composition, but rather heavy.

Mr. Nicholas Hawksmore was a little too clever. His north front was carefully designed with niches and Ionic columns; his south front was left barefaced. When King William Street was cut through to the bridge this parsimony was revealed, this side being now the more important elevation.

St. Mary Woolnoth, on account of the great value of its site, has been in continual danger of demolition. Crowded about as it is by tube stations, it has been, and is still, looked upon with hungry eyes.

May we hope that this Woolchurch lamb may long be spared from the devouring commercial wolf, to remain a quiet spot for the neurotic City men of the twentieth century, a thing of beauty and a joy for ever to the antiquarian

LADY ARTISTS AT THE BAILLIE GALLERY.

THERE are, in fact, four self-centred shows at this gallery, three of them the work of ladies and one supplied by a man; but with the latter and with one of the ladies this notice is not concerned.

Mrs. Mary F. Raphael's works are evidently appreciated; for of the sixty-seven shown as many as thirty-one were already sold when we paid a week-belated visit. Of these sketches "At Home and Abroad" we prefer the French studies; the Italian work lacks the brightness of atmosphere associated with the Sunny South; we would, however, draw attention to the "Canale Madonetta, Venice," which is an interesting side "street" in the city of canals, or it is made interesting through Mrs. Raphael's clever brush-work and vigorous chiaroscuro. "Wisteria, Venice," is distinctly good. The Fontainebleau group merits our cordial approval; there is the charming "Moat," with its nice sunny effect and good water-reflection, and there is "The Palace," a striking architectural morceau, showing the palace angle filling in the background, and well reflected in the satisfactorily portrayed water; the picture composes well as a whole, with groups of trees to the right and left. Again, there are "The Lake" and "The Path of Orpheus," the latter's colour scheme being noticeable for the grey of the pathway being carried on and up the bank amidst the green. There are other Fontainebleau sketches which we must pass over in our haste to draw attention to "The Stagnant Fountain, Versailles," which we regard as one of Mrs. Raphael's happiest efforts (though "effort" is not the right word to employ for such an obvious success); it is poetical and full of the mystery provided by a gloom-haunted spot. Two sketches of the sand dunes at Le Touquet call for special notice. "A Sunny Path: Roses and Forget-me-Nots," has very pretty colouring, and the pergola effect is attractive. The last picture to which we can devote space is "The Concierge," showing a white poodle in a doorway; the work is good in tone, sunshine study, and general effect.

The outstanding quality of Mrs. Humphreys-Williams' sketches is the softness, which is so much in evidence, a quality that may easily pall, however. But there are numerous exceptions. "Lierna, Lake Como," is very vigorous, and is one of the premier works in point of merit. "Between Winchelsea and Rye" must receive similar comments; in fact, the Rye and Como sketches stand pre-eminent amidst the work shown. "Port of San Giovanni, Lake Como," is a little too clear-cut to be quite satisfactory. "Lake of Piano" composes well, and "In the Fluela Valley" is very good, with its snow-clad mountains and blue-grey foreground. "From Menaggio, Sunset," has very pretty colouring in pinks and yellows. In the "Swiss Chalets, Davos," the mountains are very well put in as background. "King Cups" shows the flowers and foreground satisfactorily painted, but the sky and trees are poor. Altogether, the exhibitions by these two lady artists prove sufficiently interesting.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Allied Artists' Association.

SIR.—Although there is hardly a word in your article with which I agree, I am nevertheless obliged to you for inserting it, as we appreciate candid criticism; but I do wish you had mentioned the few architectural designs.

The architect invariably complains that his work is neglected by the Art Associations, so this year we notified some 6,000 that we would be willing to exhibit their work of any size, and the response was nil. Our offer is still open for next year, so I think that after this they can hardly have further cause for complaint.

Whether the paintings are good, bad, or indifferent does not affect the question, and, of course, judging by the sales here, everybody, luckily, is not of your opinion as to their merits. Perhaps in the interests of architecture you might care to make this known to your readers.—Yours faithfully,

ERNEST A. McCANN.

Secretary, Allied Artists' Association, Ltd.

Royal Albert Hall:

July 23, 1912.

The Architect.

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FORTHCOMING EVENTS.

- Monday, August 5.*
- Northern Architectural Association, Students' Sketching Club :
Annual Excursion.
- Wednesday, August 7.*
- The Institution of Municipal Engineers : Annual Meeting of the
Southern District. Annual Meeting of the South-eastern
District. Both at Westminster.
- Saturday, August 10.*
- Sanitary Inspectors' Association : Meeting of North-western
Centre at Wallasey.
- Monday, August 12.*
- Architectural Association : Annual Excursion commences at
Shrewsbury (six days).

OLD SERJEANTS' INN.

As all Londoners know, there are, or have been, two Serjeants' Inns in London, the one in Chancery Lane, the other in Fleet Street, but at one time there were four if not more hostels used by the serjeants and judges. There are now no more serjeants-at-law, for under the operation of the Judicature Act of 1873 the special privileges of the serjeants practically ended, and Baron Huddleston, the last baron of the ancient Court of Exchequer, was apparently the last serjeant-at-law to be created. The privileges of the serjeants were considerable, as, firstly, the order of the coif was a necessary stepping-stone to the Bench, for, as Sir John Fortescue, who was made *Chief Justice of the King's Bench* in 1442, says: "None shall be exalted to the bench without first taking on him the degree of serjeant, nor can he receive this degree without having studied the law at least sixteen years." The mark of the degree was the wearing of a white silk coif, from which the rank was often described as the order of the coif. Another privilege of the order in ancient times was that its members were free from the disability of King's Counsel to appear against the Crown, and the penalty of vacating their seat if members of Parliament. In the reigns of Edward VI., Elizabeth, and James I. the Speaker of the House of Commons was almost always selected from the Serjeants-at-Law.

Old Serjeants' Inn in Chancery Lane was at the close of the fourteenth century a hostel known as Faryngdon's Inne in Chancellor's Lane, which latter is supposed to have been named after a bishop of Chichester who lived there and was Chancellor about 1292. The chapel for the custody of the Rolls and Records of Chancery was built adjacent to the Inn by Henry III. It is probable that Robert Faryngdon, who gave his name to the Inn and was a "Clerk of the Chancery," held the Inn on behalf of Judges and Serjeants. He is named in a deed of 1404. In 1414 the Bailiff of the Bishop of Ely rendered an account for the repair of a chamber occupied by one Walter Askham, an apprentice or student of the law, and shortly afterwards the entire hostel was demised to "Judges and others learned in the law." So that during the fifteenth century, at any rate, this Inn was recognised as the appropriate residence of the judges and leaders of the Bar. In 1484 there was granted to Sir Thomas Grey a lease of the "Hostel called Serjeants Inne in Chancellor's Lane," from which time forward the premises were known as Serjeants' Inn.

The popularity of Serjeants' Inn appears to have led to a certain amount of overcrowding, for by a deed of 1618 the Earl of Cumberland demised to Sir Lawrence

Tanfield, Chief Baron of the Exchequer and other Judges and Serjeants-at-Law, part of Clifford's Inn Garden, adjoining, in the following terms: "Know ye that we for the especial love which we bear to the Justices of the Lord the King and Serjeants-at-Law now dwelling in the Serjeants' Inn in Chancery Lane, London. And being willing to show them special favour and that successively henceforth as well the said Justices of the Lord the King and Serjeants-at-Law who now dwell in the said Inn as others who shall in future abide in the said Inn may have a certain part of a certain garden called Clifford's Inn Garden, in which they may walk agreeably for their better health, and that they may enjoy the benefit of the air which now they have not or otherwise dispose of that part as to them it shall better seem to be expedient."

The Serjeants' Inn in Fleet Street was a collateral of the older establishment in Chancery Lane until 1758, when the Fleet Street members joined the Inn in Chancery Lane, which continued the head-quarters of the Serjeants' fraternity till the extinction of the order.

The buildings of Serjeants' Inn had necessarily been rebuilt and altered many times during the six centuries that it was occupied by the Judges and Serjeants-at-Law. The Hall was rebuilt in 1678, and on the exterior of it were two decorative panels bearing this date and the royal badge with the monogram of Charles II. The chief feature of the interior seems to have been the stained glass in the windows with armorial bearings of members of the Inn.

Amongst the historical events associated with Old Serjeants' Inn was the judicial commission held to settle the boundaries of London after the Great Fire of 1666. On this commission sat Sir Matthew Hale, one of the most eminent judges of his day, to whose impartiality and ability were no doubt largely due the general satisfaction which was given by the Commission's settlement of the boundaries and of conflicting claims.

Many celebrated judges and eminent lawyers have been connected with Serjeants' Inn. Sir Thomas Littleton, the author of the celebrated "Treatise on Tenures," was called to the degree of the coif in July, 1453, and Sir Edward Coke, the author of the legal classic "Coke upon Littleton" is believed to have resided in Serjeants' Inn.

Other historical associations and records of eminent members are to be found in a charming and well-illustrated brochure on "Old Serjeants' Inn, Chancery Lane," privately printed for the Law Union and Rock Insurance Company, Ltd., from which we have gathered many of the particulars in this article.

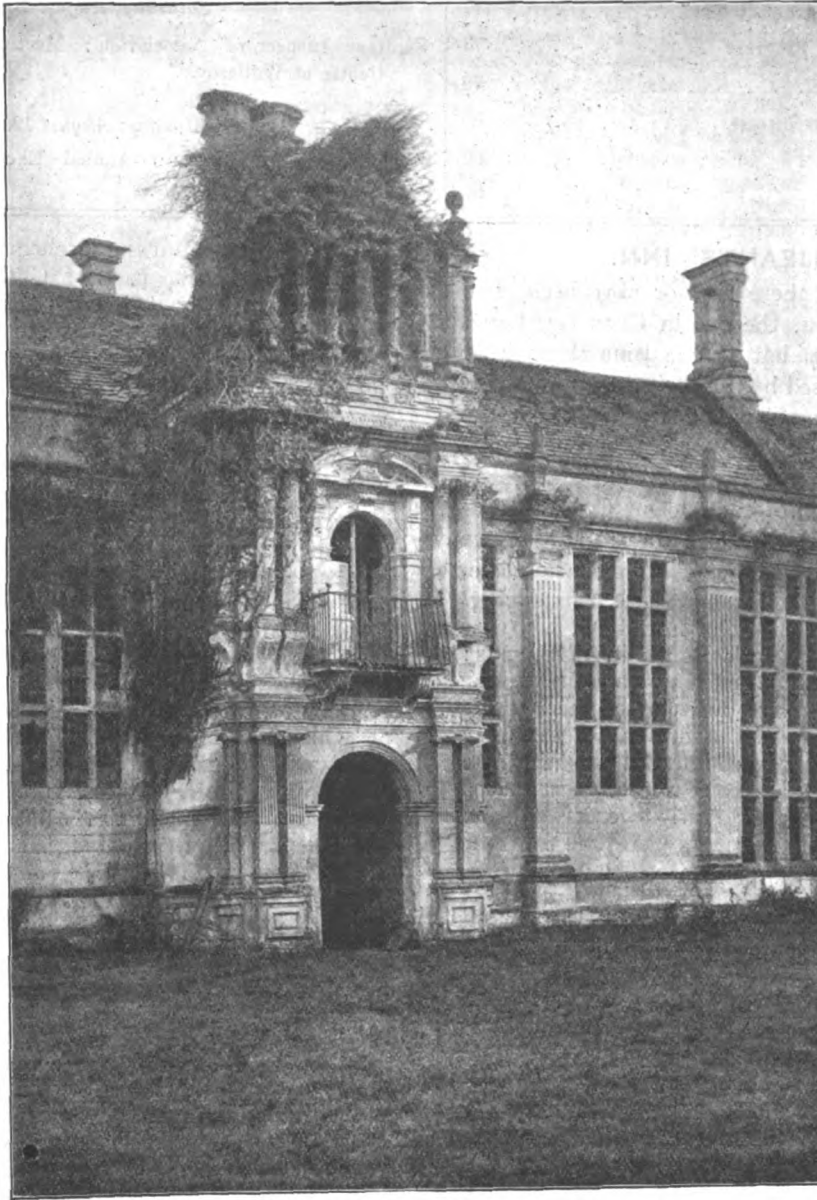
Old Serjeants' Inn was purchased by the Company and pulled down to make room for the new building which forms the subject of our plate illustrations this week.

SOME OF THE GREAT HOUSES OF NORTH-AMPTONSHIRE.*

THE county of Northampton is particularly rich in noble buildings. Its spires and its squares have long been famous, and it is not therefore surprising to find that the churches belonging to the spires and the houses belonging to the squares are worthy of more than passing notice. It is hardly necessary in the present day to insist upon the benefit and pleasure to be derived from the study of ancient buildings. They are in themselves generally so beautiful as to attract the notice of even casual observers, but to those who know how to read the language written in their carved stonework what a series of pages in the book of history do they unfold. Particularly is it so with the churches. They indicate the existence of thriving communities over the greater part of the county since the time of William Rufus, and in places even before Harold fell at Hastings. Century after century

attention. This movement was felt in Northamptonshire as much as in any part of the country. Holdenby, Kirby, and Burleigh, each a palace of the first rank, were among its direct results. Rockingham Castle was enlarged; so were Drayton, Rushton, Apethorpe, and Canons Ashby; Dingley Hall was built, besides many manor houses of less degree.

Let us first go to Rockingham. This is the oldest of all the places that we shall visit, for the Castle was founded by the Conqueror himself. Its records are continuous, although of no great popular interest. They are, in fact, chiefly lists of custodians of the Castle and of the sums disbursed for repairs. One important event, however, stands out from these petty details as early as the year 1095, in the reign of William Rufus. Rockingham, it must be remembered, was a Royal castle, and its principal purpose was to serve as an abode for the King when he came to hunt in its great forest, which then covered the whole of the northern part of the



KIRBY HALL.—PORCH IN COURTYARD.

were they altered, enlarged, and improved; slowly monument was added to monument until that great epoch in the history of buildings, the Reformation, of which an early event was the Dissolution of the Monasteries. With this event church building practically ceased, and house building began. No further alterations, enlargements, or improvements were made in the churches. The monuments, it is true, still grew in number. But the revenues which formerly went to the great Roman Catholic Church were now diverted into private hands, and by them chiefly employed in building, altering, enlarging, and improving—not churches, but houses. A great era of house building began, which lasted from the middle of the sixteenth century till the Civil Wars of the next century engrossed everyone's

county. On the fifth Sunday in Lent, or, to be more definite, on March 11, in the year 1095, a solemn meeting of all the nobles and prelates of the land was held at Rockingham for the purpose of considering a very important question—namely, whether or no Archbishop Anselm had been a traitor to the Crown in accepting his office from Pope Urban II., whom the King had not officially recognised, for there were then two rival Popes. A meeting of all the nobles and prelates in those days was nothing less than a conclave of all the power and intellect of the country, and we may safely say that in the present day no meeting has ever been held that brought together so much of the real strength of the land. The question at issue warranted it, for in the point to be settled was involved the relation of the secular power to the ecclesiastical. Pope or King, which was to be obeyed? This momentous question which troubled England continually till Henry VIII. settled it once for all was discussed with all

* A Paper by Mr. J. Alfred Gotch, F.S.A., read on July 26 at the meeting of the Royal Archaeological Institute held at Northampton.

gravity on that Sunday in March more than 800 years ago, with the result that, while deeming the Archbishop to have been wanting in respect to the King, the assembly did not pronounce an opinion as to his relations with the Pope. This somewhat lame and impotent conclusion was shortly followed by the official recognition, which had hitherto been withheld by the Monarch. Beyond this great Council, no event of the first importance is recorded of Rockingham. All the early Kings came down there to hunt, but never again did its walls behold so brilliant an assembly; and its history is made up of petty details of forest administration till the time of James I., in whose reign it was granted to the ancestors of the present owner, and since that time its records have been of a domestic nature.

At Drayton we have not anything like so old a foundation as at Rockingham, but the oldest parts of the house are about the same age as the archway at Rockingham, for we learn

Sackville, from whom the present owner is descended. Drayton has played no part in history, but none the less it is an eloquent witness to the long series of changes of which history is the record. Here you may see the battlemented walls and the vaulted passages of the stern times of the Edwards; the tall chimneys and long gallery which were the fashion in Elizabeth's days, as well as the vaulted cellars, across which the dim light struggles on to mighty barrels of ale; here you may see the sashed windows, the great pediment, and the spider-legged cupolas that were erected to do honour to William and Mary when they came to visit Drayton. Elsewhere the wood fittings tell of changes made when good Queen Anne sat upon the throne, while the beautiful ironwork that stretches from one grey wall to another, and the long formal walks of verdant turf, and the great trimmed hedges of yew, and the banqueting houses, remind us of the days when Lady Betty Germaine used to make apricot jam.



KIRBY HALL.—GATEWAY IN OUTER COURT.

that in the year 1328 Simon de Drayton obtained a licence to crenellate his house at Drayton, and to impark a certain number of acres, so that the bulk of the outside walls come down to us from the time when an Englishman's house was in very truth his castle, the object of which was scarcely more to shelter himself than to annoy his neighbour. Since that time Drayton has never been sold nor alienated, but has always passed from owner to owner, either by inheritance or gift. Many men have been lords of Drayton. The De Veres, of whom Simon de Drayton was one, held it first; from them it passed to the Greenes, some of whom lie buried in Lowick Church under as fine monuments as any in the land; from them it went to John Stafford, Earl of Wiltshire, and from him to the Mordaunts. The Mordaunts held it till about 1700, when it passed by marriage to Sir John Germaine, who left it to his widow, Lady Betty Germaine, the friend of Horace Walpole; she, in her turn, left it to Lord George

Drayton was in some sort connected with Rushton at one time, for one of the Veres of Drayton married a sister of John Tresham, of Rushton, who stands out from the faded canvas of antiquity by reason of two letters of his which have been preserved, and show him to have been a very common-place man, subject to like passions and infirmities with ourselves. In one, written about the year 1500 to his brother-in-law, Sir Henry Vere, of Drayton, he says he returns "your Aporne and Gussets of Mayle" and offers to buy them at any price that Sir Henry may think fit. Then presently he goes on to beg the loan of five marks, "or else that ye will send me forty shillings, for it would do me great ease now and I have need thereof." The second letter, written a day or two later, begins, "Right Worshipful Brodyr, in the most loving wise I recomend me unto you and unto my sister your wife, and brodyr whereas I sent yow word by your servant to have been with yow as this day,

I pray yow to take it for noon unkindnesse that I come not, for I have such a soresnesse in my throat that hit grevys me to speake or to swallow anything, and the wether is soe farvente colde that I dare not aventure forth."

This same John Tresham was also a party to a curious deed, which throws some light on the way in which people used to dispose of their daughters in those days. It also tells us how it was that the Mordaunts became connected with

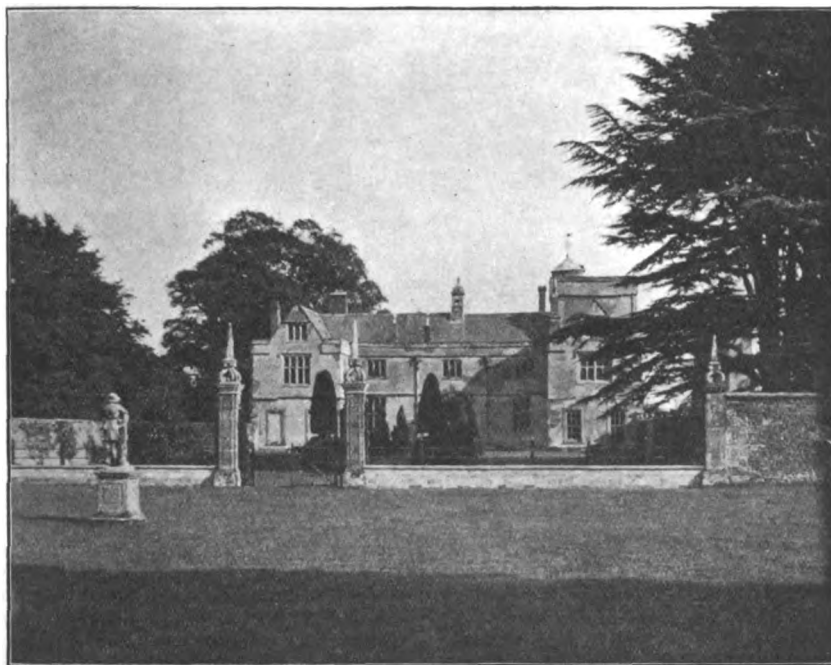
He himself soon became a grandfather, for people married early in those days, and his son's son grew up to man's estate in the lifetime of his grandfather. The youth's own mother died, and his father married again; this time a widow with daughters of her own. They all lived together at Drayton, and the natural consequence was that the lad Mordaunt fell in love with one of his new connections. This, however, did not at all suit the grandfather, who, it will be remembered,



RUSHTON HALL.—NORTH-WEST CORNER OF COURTYARD.

Drayton. The other party to the deed was John Mordaunt, a Serjeant-in-the-Law to King Henry VII. John Mordaunt on his part agrees to do his best to bring about a marriage between his two sons and two daughters of Tresham's sister, Lady de Vere, to whose husband, Sir Henry, the two letters were written which we have just read. He is also to endow them with a certain sum per annum. In return for this,

had his wife chosen for him by a judicious parent; moreover, the match was not a good one, and so the grandfather would not hear of it, and then chaos ensued, and there within the grey walls of Drayton, far off in the sixteenth century, were all the miseries and passions which swell the modern novel. The details of the tragedy are wanting, but we learn that the match never came off, for young Mordaunt married



CANONS ASHBY.—THE GREEN COURT AND HOUSE.

John Tresham on his part agrees to give John Mordaunt the refusal of any land that Tresham may be desirous of selling. This compact was carried out, at any rate so far as concerned the marriage of young Mordaunt with the elder daughter of the de Veres, and in course of time young Mordaunt, in right of his wife, stepped into the inheritance of Drayton, where he and his descendants remained for many generations.

a Miss Darcy of the North, and lived in great state and bounty at Drayton, to which he afterwards built a large wing. And the step-sister, what of her? Possibly her skeleton may be found at Drayton some day, possibly her ghost still haunts the ancient towers; or perhaps (which is still more likely) she married some wealthy knight from a distance, and lies buried side by side with her husband,

under a handsome Elizabethan tomb, with their twenty children accurately arranged beneath them in two neat rows of sons and daughters.

But we must not linger too long at Drayton; neither with the Mordaunt, Earl of Peterborough, who, under the name of Halstead, caused to be compiled the genealogies of his race—a sumptuous volume of which only twenty copies were printed; nor with Sir John Germaine, who laid out the

when a Tresham was Speaker of the House of Commons. The end of this unfortunate gentleman was sad; he was travelling home to Sywell from the town of Northampton, when, as he was saying his matins on the way, being a little in advance of his servants, some retainers of one of his enemies thrust him through with a spear and so left him. His servants coming presently up to where he lay, found him in this sad plight and carried him back to Northampton, where they cut



BOUGHTON HOUSE.—THE STABLES.

gardens in the formal Dutch style which they wear, even now; nor with his widow, Lady Betty, who has left an excellent recipe for apricot jam, and who was mistress here when Walpole paid his flying visit, and rambled all over the house, and was better pleased than with any other place in the county, which he unjustly stigmatised as dull. These matters we must leave, and hurry away to the home of that John Tresham whose acquaintance we have already made,

off each end of the spear; but this attempt at a remedy was ineffectual, for on the truncheon being pulled out the poor man died. His son fared little better, for he lost his head after the fight at Tewkesbury, in the Wars of the Roses. The next Tresham was our acquaintance with the cold, who built a large part of Rushton Hall, as well as a smaller house at Lyveden. But the most famous of all the race was this John Tresham's great-grandson, Sir Thomas, who not only added



DEENE PARK.—EAST FRONT.

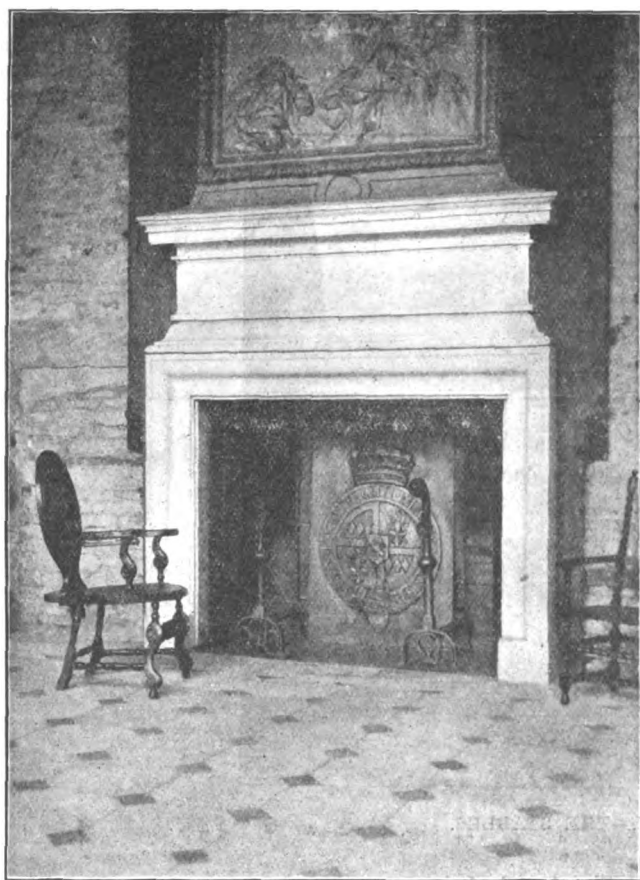
when the weather was "soe farvente colde," and he had such a sore throat. We will, therefore, turn our steps to Rushton.

The Treshams were one of the most noted families of the county. They had possessions in half the parishes of the northern part. They had houses at Sywell, Rushton, Lyveden, Newton, and Pilton. They played a conspicuous part in the history of the county, beginning in the reign of Henry VI.,

to the house begun by his ancestor, but also built the Market House at Rothwell, the very curious Triangular Lodge, and the new building at Lyveden.

The peculiar bent of his mind is further shown in the new building at Lyveden, which sets forth the doctrine of the Passion. Here we have a building of the shape of a cross on plan, with each side of each arm equal. The cor-

nices are decorated with carved symbols of the Passion, the cross, the crown of thorns, the hammer, the nails, pincers, sword, spear, lantern, and the sword of Peter with the ear



BOUGHTON HOUSE.—CHIMNEYPIECE IN GREAT HALL.

of Malchus adhering to it. This place was evidently meant as a dwelling-house, but whether for Sir Thomas himself or for priests we cannot tell. But however this may be, these buildings of Sir Thomas Tresham will long remain to pre-



GATEWAY.—DRAYTON HOUSE, NORTHANTS.

serve his memory as an ardent advocate of his religion, and one who was not afraid to suffer for the principles he professed; and, whatever those principles may be, there is something noble in doing that.

Let us now return to Rushton. We have said that Sir Thomas added to the house of his ancestors; his work not only

bears the date of 1595 on it, but also the arms of Tresham, the three trefoils. Near to it is other work, bearing later dates, 1610, 1626, 1627, &c., and, moreover, no longer displaying the trefoils of Tresham, but a different device—that of the Cokaynes. In this change we find an intimation of one of the most notable events in English history. Why have the trefoils of Tresham given place to the cock of the Cokaynes? Because of Gunpowder Treason. Sir Thomas the builder died in September of 1605; two months later his son Francis was in prison for being concerned in the great plot, his estates were confiscated, and the glory of the family was departed. Rushton passed away from the Treshams for ever, and was bought by the Cokaynes. They continued the building operations which were then in progress, and gave to the house the aspect with which we are familiar. At Rushton the Cokaynes remained till more than a quarter of the last century had passed, and then the place was sold. The Cokaynes, or Viscounts Cullen, as they became, were a hard living race, not a little given to extravagance, and to one of them occurred a somewhat startling incident. It was the second Viscount Cullen, who in 1651, being then sixteen years old, was betrothed to a great heiress four years his junior. In course of completing his education he made the tour of the Continent, as was the fashion in those days. Beneath the



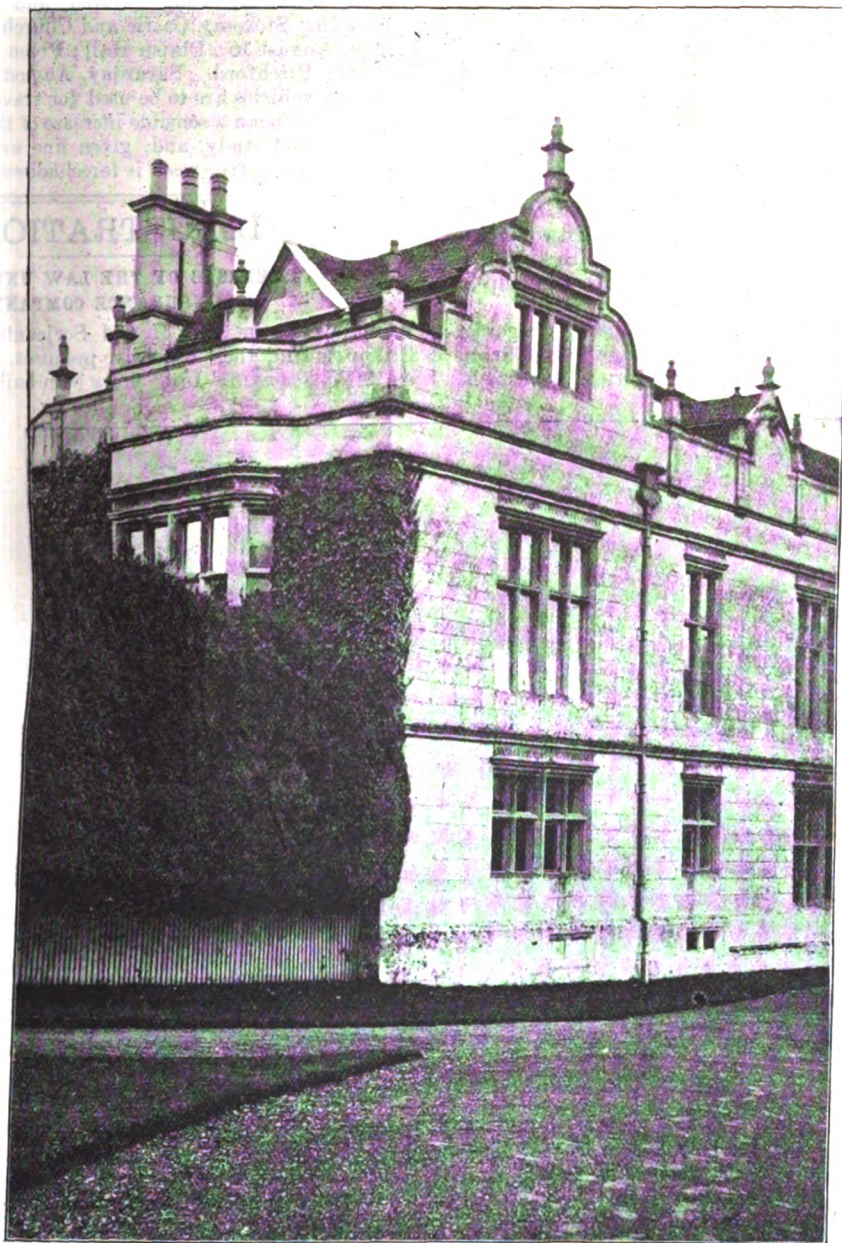
ARMS OF FANE IMPALING NEVIL, FROM CEILING OF DINING-ROOM, APETHORPE HALL.

genial influence of Italian skies he so far forgot his northern heiress as to make love to an Italian lady of high birth—a princess it was even said. However, the time of his sojourn expired, and he returned to his native country alone, and in due course proceeded to fulfil his engagement to the heiress. The festivity was at its height, the great hall at Rushton rang with the sounds of mirth, the cup was circling freely, when there dashed up to the central door of the long corridor a chariot drawn by six horses, from which alighted no other than the slighted princess. She made her way to the feast, seized the great golden cup, and emptied its contents to the perdition of her rival. Then, falling on her knees, she invoked the most terrible curses on the happy pair, and solemnly prophesied that the bride should "live in misery and die in want." This done to her own satisfaction and the consternation of the company, she retreated to her chariot and returned to her native land, and never emerged from her obscurity again. A prophecy founded on knowledge such as the princess possessed on this particular occasion, and delivered in such circumstances, was calculated to work its own fulfilment, and it is recorded that the Viscount, being of extravagant habits, did indeed lead his wife a sad life, and that "the beautiful Lady Cullen," as she was called, actually died in Kettering in a state of great poverty. It is pleasant

to turn from these tragedies to the days of an earlier Viscount, the father of the faithless lover, and to picture his friend the poet Dryden pacing the avenues of the Rushton gardens while engaged upon his poem of the "Hind and Panther." Dryden was a native of this county, having been born at Aldwinkle All Saints, the twin village of that in which Thomas Fuller was born, and it is fitting that he should remain in our memories associated with the beautiful home that once belonged to Sir Thomas Tresham, than whom no man has shed more lustre on the county.

But we must make our way to Dingley, which is on the north-west borders of the county not far from Market Harborough. The house dates from two periods, principally from the time of the Georges, but also in places from the middle of the sixteenth century. It is the latter work which is of chief interest to us. The extent of it shows that the

been carved by some very ignorant person, to judge from the terrible mess he has made of some of the words. However, when rescued from the distortions which this artist caused, the sentences run thus, some in Latin and some in English: "Anno 1560. Go contented with thy lot. Let not the cobbler concern himself with aught beyond his last. It is better to die virtuously than to live dishonourably. That that thou doest, do it wisely, and mark the end and so forth. Watch men, for time flies with a silent foot, and the years go by without a sound. If God be with us who shall be against us? God save the King. 1560." The King in 1560—who was he? Are we to gather from this that Edward Griffin still regarded Philip as the king, although Elizabeth had been already two years on the throne? If so, it is well for Edward Griffin that the queen did not honour him with her presence on one of the numerous progresses which she



APETHORPE HALL.—SOUTH-EAST CORNER.

original house was of considerable size, and we learn that it was built by Edward Griffin, who was Attorney-General to Queen Mary. It is of unusual interest in one respect—namely, that on its porch is an inscription setting forth that it was built "Anno 1558 in the rayne of Felep and Marey." Not many buildings are to be found with that statement on their face, for the reign of Philip and Mary was short; and, indeed, we are hardly accustomed to think at all of Philip being recognised as the real King of England. Besides the date of its erection, the porch bears other inscriptions; the initials E.G., for Edward Griffin, and A.G., for his wife, as well as the motto "After darkness cometh light," not altogether inappropriate to a man who had just emerged from obscurity. Besides the porch there is a wing of the original building left, in the middle of which is a great gateway, and round the arch are inscribed further pithy sayings, which must have

made to this county. Of the Griffins little more need be said. The first of the race, the builder of the house, exhausts their claims upon our attention. Him indeed we are glad to think of, rejoicing in the light of his new prosperity, and ornamenting his gateway with pithy sentences. In these carved stones his memory will live, and not only there, but also on the cornice of Rothwell Market House, where his arms appear, along with those of other friends whom Sir Thomas Tresham delighted to honour.

We must now move away to Kirby. Of all the houses we have visited this is at once the most interesting as a building and the most devoid of history. We can hardly ever find it mentioned, and there are no legends about it which I am able to recount. We know that the first stone was laid in the year 1570, twelve years after the porch at Dingley. The parapet bears the date 1572. The doorways are ornamented

with the devices of the Stafford family, and on the parapet near to the date of 1572 is carved "Humfre Stafard," from which we learn that it was Sir Humphrey Stafford, of Blatherwick, who built the place. But he did not retain it long, for before the close of the century it had passed to Sir Christopher Hatton, the grave Lord Keeper, who "led the brawls," and in that family it has remained ever since. For more than two centuries it was the home of the Hattons, or the Finch-Hattons, and there they lived, hidden amid their thick massed trees, and so far removed from "the madding crowd's ignoble strife" that chroniclers appear to have forgotten the existence of one of the finest examples of Elizabethan architecture that the country can boast of. At the beginning of last century, indeed, its extreme seclusion led to the proposal to make Kirby an asylum for the Court, in case the threatened invasion of Napoleon actually took place; but the occasion never arose, and the house returned to its former obscurity, till its owners, having other and probably more convenient places to keep up, it was at length abandoned, and suffered to go to decay. The process of that decay is fitful but certain. Time flies, as Edward Griffin says on his house at Dingley, with a silent footfall, and the years go by without a sound here at Kirby too, except that now and again a great piece of masonry thunders down and sets the rooks in commotion; and the next time a visitor seeks a favourite nook it is gone. Enough remains to tell how noble a mansion it once was, the worthy work of two architects. For Sir Humphrey Stafford reared it with the help of John Thorpe, and the Hattons altered it with the help of Inigo Jones.

To many more delightful places you have been, are going, or might have gone had there been time enough. To Canons Ashby, to Castle Ashby, to Deene, to charming Apethorpe,

in Fayth," and a little way above, beneath the sundial, a fit timepiece for so calm a spot, is a sentence that breathes even a quieter and happier spirit than that of Edward Griffin's, and one which could scarcely have been more happily chosen for the place which it adorns, "*Tempora labuntur, tacitisque senescimus annis.*" Time flows by, and we grow old with the silent years.

ARCHITECTURAL ASSOCIATION EXCURSION.

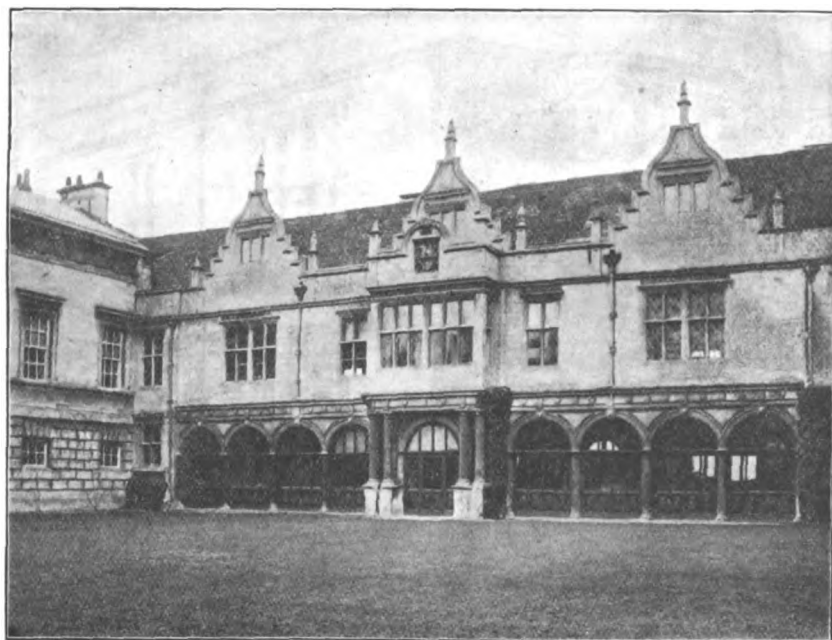
WITH headquarters at Shrewsbury, the forty-third annual excursion of the Architectural Association has the following excellent programme:—Monday, August 12: Albright Hussey; Grinshill; Preston Brockhurst; Moreton Corbet; Battlefield Church. Tuesday, August 13: Wroxeter Church; Shipton Hall; Wilderhope Manor House; Broncoft Castle; Church Stretton. Wednesday, August 14: Madeley Court; Shifnal Church; Tong Church and Castle. Thursday, August 15: Stokesay Castle and Church; Ludlow; Ludford. Friday, August 16: Plaish Hall; Preen Manor and Church; Langley; Pitchford. Saturday, August 17: Shrewsbury.

Motor vehicles are to be used for travelling, which in this district will mean a sensible increase of the time available for sketching and study, and, given fine weather, a very enjoyable and instructive week is foreshadowed.

ILLUSTRATIONS.

NEW PREMISES OF THE LAW UNION AND ROCK INSURANCE COMPANY.

ERECTED on the site of Old Serjeants' Inn and part of Clifford's Inn, these extensive premises, which will be known as "Old Serjeants' Inn," have been built for the Law Union



APETHORPE HALL—ENTRANCE SIDE OF FIRST COURT.

to King's Cliffe, once a Royal residence, where King John lost 4s. 10d. at play to the Earl of Salisbury; or else to Fotheringhay, whose tragic castle has sunk to one shapeless mass of stone; or to Barnwell, where the castle still stands, but without a shred of history; or, still keeping by the winding Nene, I might tell you of Dryden's birthplace or Titchmarsh, where his father enjoyed £40 a year; or I might take you into the beautiful park of Boughton, and guide you along the lofty avenues which traverse the country in all directions; always beautiful, whether in winter, when they stretch their purple brown masses across the landscape, or in spring, when the rooks gurggle in their lofty branches, or in summer, when they cast great lines of grateful shade. But time fails us for such excursions; only to one place will we go, one which we should pass through as we emerged from Boughton Park. There, just outside the park walls, is the little village green of Weekley, overshadowed by some of the trees which have strayed beyond the park, bounded on one side by the church, and in front of us by a long low almshouse or hospital, erected in the year 1611 by one of the Lords Montagu for the benefit of his ancient retainers. Nothing could be more peaceful than this scene, and as we gaze on the quaint front of the little building we can make out two inscriptions; one over the door, "What thou doest, do yt

and Rock Insurance Co., Ltd., who will occupy a large portion of them as their chief offices. The remainder will be divided up into offices of such area and so arranged as to suit in every respect the desires and convenience of tenants. On the north side of the building there is an open space, which will be maintained in perpetuity for the lighting and safety of the Public Record Office, to which it belongs. The main entrance to that part of the building to be known as "Old Serjeants' Inn Chambers," which is to be let off as offices, will be in Chancery Lane. The various floors will be reached by a wide, handsome staircase and by two quick-running lifts. A second staircase will connect the floors with an entrance in Clifford's Inn Passage, thus giving immediate access to Fleet Street. The building is of fireproof construction throughout, and is fitted with two hydraulic vacuum cleaner plants, by which all the offices, corridors and passages can be cleaned efficiently and at a minimum expense. Electric lighting and telephonic communication systems will be provided upon all floors, and at such points as will suit tenants. The building will be warmed throughout by the most modern and approved hot water system and by fireplaces. The premises have been erected from the designs and under the superintendence of Mr. Arthur Blomfield, M.A., F.R.I.B.A.

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The Architect, Aug. 2nd 1912.

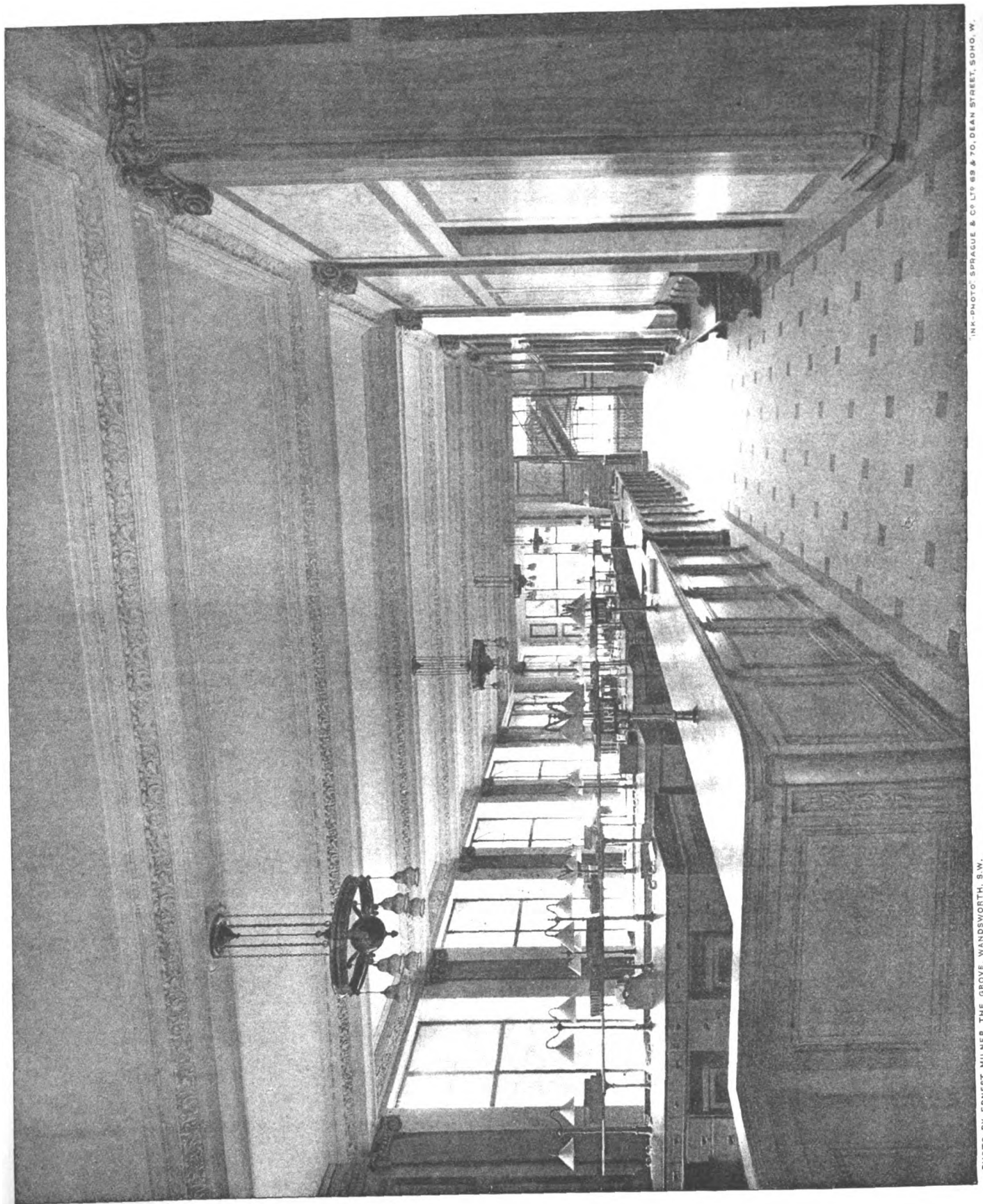


PHOTO BY ERNEST MILNER, THE GROVE, WANDSWORTH, S.W.

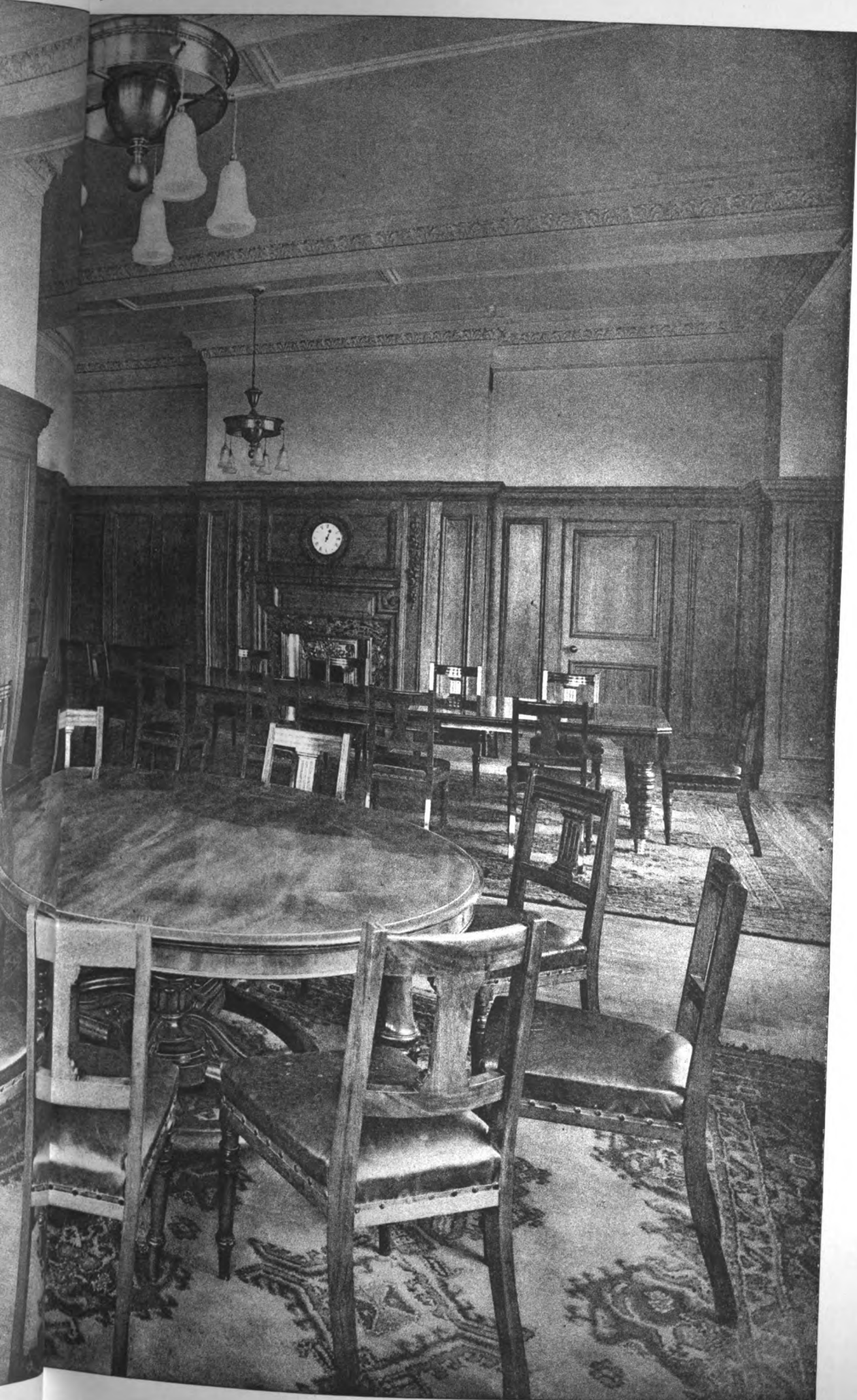
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The Evening Post, 2nd 1912.



"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

INSURANCE CO., LTD., CHANCERY LANE, LONDON: THE LUNCHEON ROOM.
ARTHUR D. F.R.I.B.A., Architect.







PHOTO BY ERNEST MILNER, THE GROVE, WANDSWORTH, S.W.

Oct. 2nd 1912.



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The Architect, Aug. 2nd 1912.

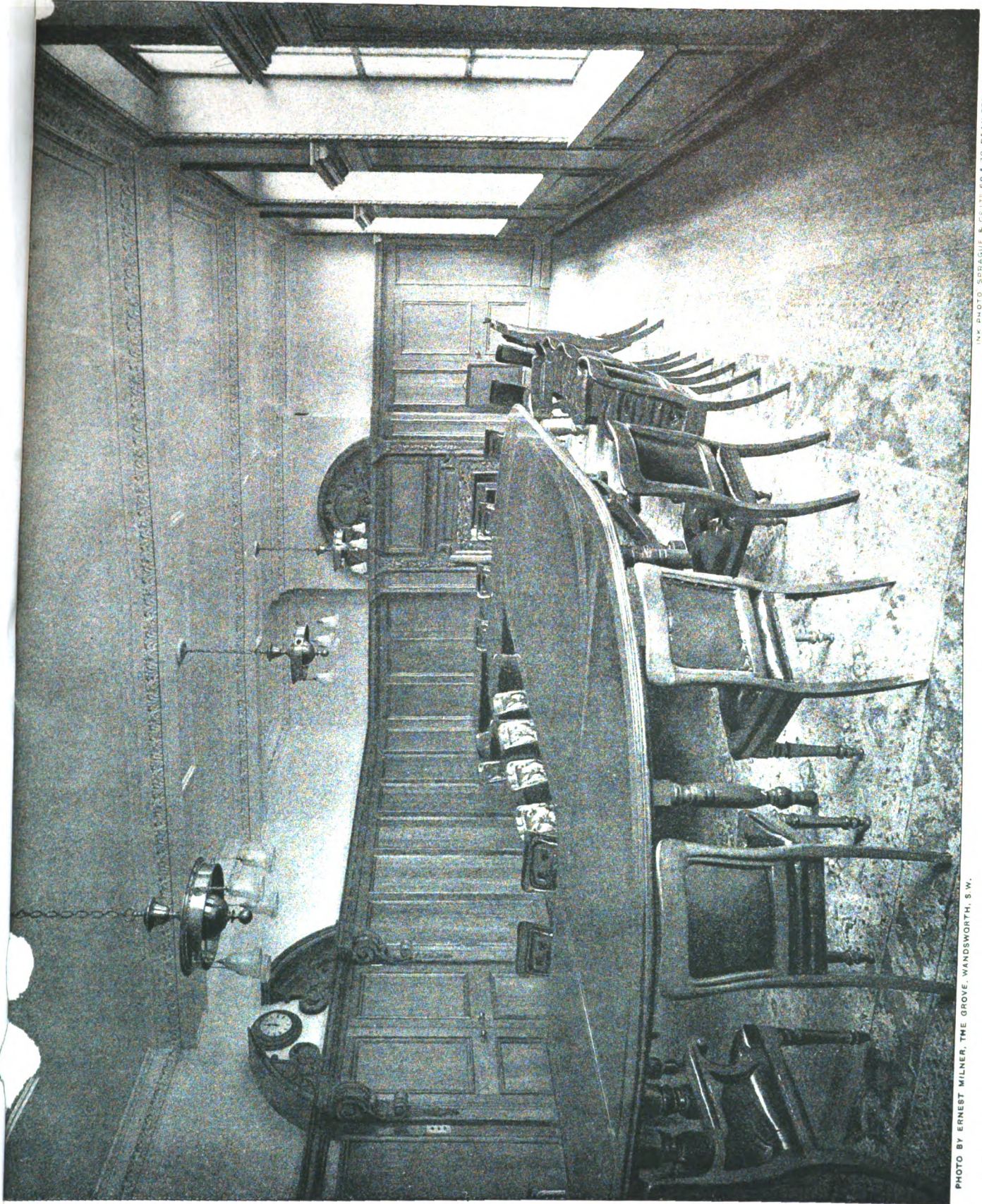


PHOTO BY ERNEST MILNER, THE GROVE, WANDSWORTH, S.W.

NEW PREMISES OF THE LAW UNION AND ROCK INSURANCE CO., LTD., CHANCERY LANE, LONDON: THE BOARD ROOM.
MR. ARTHUR BLOMFIELD, F.R.I.B.A., Architect.



ROYAL ARCHÆOLOGICAL INSTITUTE.

(Continued from last week.)

THE summer meeting of the above Society opened at Northampton on Tuesday, July 23. The first day's visits (which were reported in our issue of last week) were confined to interesting churches in the town. For the remaining eight days a wider field was mapped out. The first visit was to Boughton House.

Wednesday, July 24.

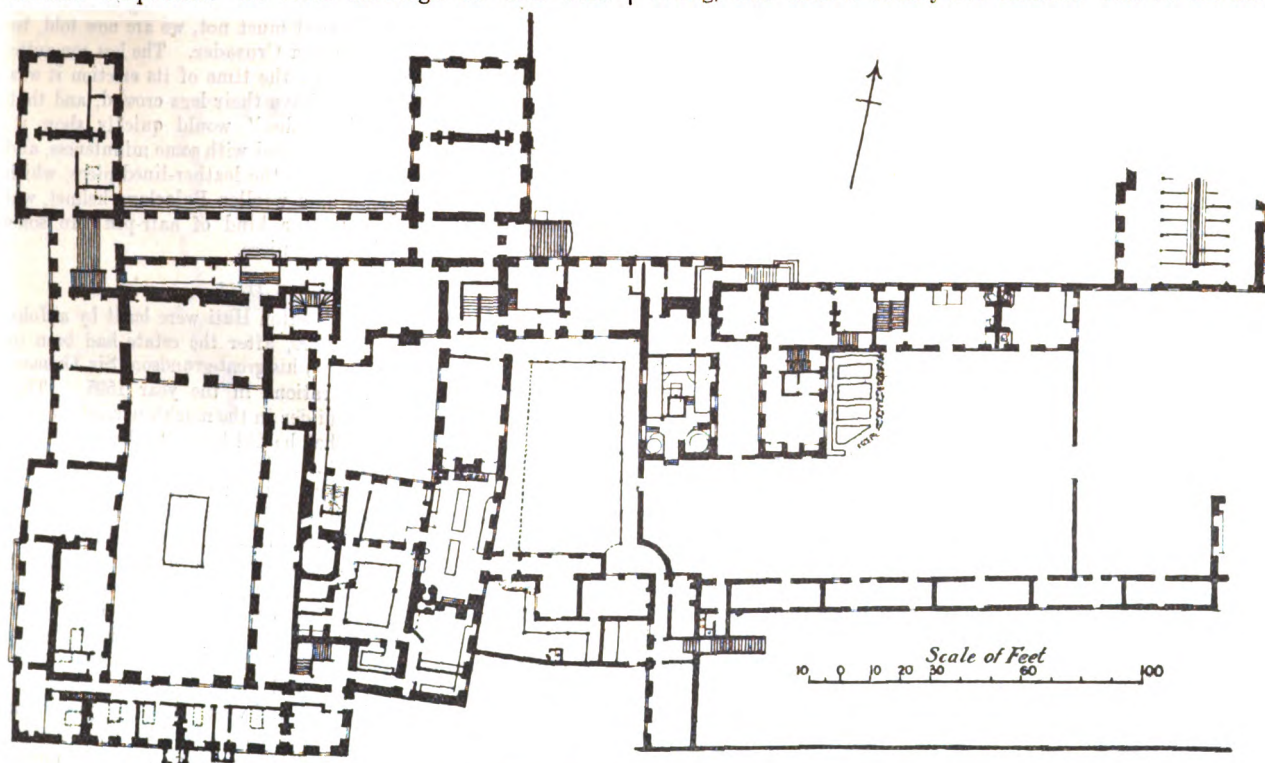
BOUGHTON HOUSE.

This house, said Mr. J. A. Gotch, F.S.A., F.R.I.B.A., in describing it to the party, is a good example of a home of one of the great nobles of the time of William and Mary. In 1528 Sir Edward Montagu, Lord Chief Justice, built himself a fine house at Boughton. But the present building may be said to date from Ralph Montagu, who came into the property in 1681. He proceeded to overlay and enlarge the old building work completely. The roof of the former great hall was one of great beauty and excellence; this the new owner did not destroy, but he had it covered with a new plaster ceiling, on which Cheron painted a large and elaborate composition. As Lord Montagu he had been

he planted avenues having a total length of sixty miles; some of them centred on the house, others pointed to neighbouring churches or spots of interest. Apparently the forest and avenues at St. Cloud were his inspiration. The grandeur of these gardens has long been dismantled; the great avenues alone remain and part of the canal system. Boughton House throws another sidelight on the increasing self-importance of the great nobles in its arrangement of its heraldry. As late as 1600 the aim of heraldry was as much decorative as historic; the family arms were principally regarded as excellent objects for ornamenting important panels, and if they ministered to family pride, so much the better. By 1708 the chief aim of the heraldry was to set forth the descent of the ducal family and its most important alliances.

The interior of this house offers an almost monotonous succession of great rooms, with their family portraits, pieces of tapestry, pictures, bureaux, inlaid tables, cabinets, and other works of art. One of the principal bedrooms has, however, two superb cartoons which are sometimes credited to Raphael. They stand out like giants among an army of pigmies—even though these be beautiful and rare ones.

Boughton had been reached by taking the train to Kettering, and then a twenty-five minutes' run in the motor



BOUGHTON HOUSE, FROM A PLAN MADE IN 1746.

Ambassador Extraordinary to France, and lived for a considerable time at Versailles. The influence of that building is strongly marked in some parts of the new work. This particularly applies to the north side, with its lofty windows and Mansard roofs; it is large in scale, sober and dignified in treatment. Indeed, it is so severe as to be thought dull by the casual visitor. This reproach is not brought against the interior. The rooms are big and stately; their walls have the great boldly moulded panels of the period; their ceilings are painted with the gay mythological subjects of Verrio and his school; the floors are filled with the tables, chairs, settees, cabinets, and bedsteads of the time. Portraits of the family hang on the panelling. Alas! for the vanity of vanities. Eventually these stately rooms were found to be cold, draughty, and inconveniently arranged—one leading, as a rule, out of another. Yet to the very fact that the house became less and less in favour we owe a debt. It was only by drastic alterations in the less notable rooms that Boughton has been fitted for occasional modern occupation. The splendour was not confined to the house; it pervaded the surroundings also. The first duke planted a double avenue as wide as the whole façade of the house. He laid out the huge gardens on a magnificent scale with parterres and wildernesses, long canals and jets d'eau. Statues gave point to the vistas. His successor, Duke John the Planter, continued the work in the gardens and outside; it is said

conveyances. An hour was allowed for summarily inspecting the vast mansion. Not many members had done more than rush through parts of it before the whistles sounded and a move had to be made to

GEDDINGTON CHURCH.

The principal interest of this building, said Mr. A. Hamilton Thompson, M.A., F.S.A., lay in the fact that incorporated in the walls is a very considerable amount of primitive Romanesque or Saxon work. The north and part of the south wall of the nave above the arcades are those of the pre-Conquest church; in the (originally) external face of the north wall is a row of triangular-headed recesses which formed the Saxon arcading. It may be assumed that the first church was aisleless and ended in a rectangular chancel. After the Conquest there may have been set up a central tower and transepts; the former was superseded by the present western tower at about the end of the fourteenth century, and the transepts were replaced by north and south aisles. When the construction of the north aisle was undertaken towards the end of the twelfth century the builders apparently commenced to open up the nave wall at the west end, as the final bay at the choir arch is only half a segment. At the end of the thirteenth century a south aisle and chantry were added. In the next century a good deal of embellishment was done, including the introduction

of somewhat elaborate sedilia and piscina. These improvements are recorded by a boldly-incised inscription round the foot of the inside walls of the chancel and the altar step in the south chapel; it is as follows: "Willelmus Glover de Geytintone capellanus fecit scabella eius are et pavementum istum cancellum ad honorem Dei et Beate Marie, qui obiit in fest Corporis Christi anno domini mcccclxix. cuius anime propicietur Deus Amen." The word "scabella" is usually assumed to mean an altar, but Mr. Thompson thought it more probably referred to the sedilia or possibly the foundation of the altar. The western tower with its spire has a feature very characteristic of churches in this part of the country—viz., angle buttresses of small projection. Noteworthy points in the interior are the late fourteenth-century panelled reredos, part of a thirteenth-century wooden screen between the chancel and the south chapel, and an elaborate arched screen bearing the date 1618 which was until recently across the entrance to the chancel, but which now is across the entrance to the south chantry. It is a florid though beautiful example of the intermixture of Gothic with Jacobean.

Mr. Hope made the very feasible suggestion that this latter screen was originally set up as the upper half of the nave chancel screen, the lower part being the thirteenth-century screen already mentioned. This idea was, however, later rather discounted on viewing a coloured drawing made before the last restoration, which showed that arch to be considerably lower than it is now and of a height quite insufficient for the two to be superimposed. Mr. Hope also made a protest about the interior walls having been "stripped of their skin." By some people, it may be replied, the removal of plaster and whitewash to a reasonable extent and the subsequent exposure of the bare bones of structure lends an additional interest.

ELEANOR CROSS, GEDDINGTON.

In the centre of the village and at the meeting of three streets is an elaborately carved cross mounted on seven steps. It has an hexagonal base, but the upper part is triangular and consequently of hard outline. It is curious that the rolls of Queen Eleanor's executors, which include minute details about many of the other crosses, should contain no mention of this one at Geddington. It is, as Mr. St. John Hope pointed out, totally different in scheme and design from the three still remaining. Instead of a massive structure it is simply a slender triangular column with three images of the Queen in the second storey, and ending in a shaft. The whole surface is covered with beautiful diaper work. Beyond doubt it belongs in date to about 1293-4. There was nothing except the figures to connect it with the Queen. The drapery of the latter is quite differently arranged to those on the Eleanor Cross at Hardingstone, just outside Northampton. While not contradicting the belief that the funeral procession in its erratic journey to London may have rested at Geddington, Mr. Hope remarked that the village was close to Hardingstone, where it undoubtedly stopped. A possible theory was that they used up some of the surplus stone from the other crosses. Whatever may be the explanation, the monument is in wonderful preservation despite its prominence.

The party then returned to Kettering, passing over *en route* just outside Geddington village a good fourteenth-century bridge with cut-waters on one side. After lunch at Kettering the cars were boarded once more. After half-an-hour's run a stop was made at

RUSHTON CHURCH.

When in the beginning of the thirteenth century the builders erected a tower at the west end of this church they did not bother to alter the west wall, but retained it exactly as it was, leaving a small deeply-splayed round window in position. The charming mediæval vestry is remarkable from the fact that it is on the south instead of the north side of the chancel, and that it has its own hipped roof; nearly half of the vestry is bricked up, and so might repay investigation. There is such an air of detachment about the building that it suggests some such use as a hermit's cell. But of such a use there are no records, so it is safer to accept the explanation that it was a fourteenth-century vestry. In the north chapel is a fine thirteenth-century effigy of a knight, and between the north chapel and the chancel is the alabaster altar-tomb of Sir Thomas Tresham (d. 1559). The latter figure is as to its drapery unique in this country. Sir Thomas (the grandfather of the builder) was the last Lord Prior in England of the Order of St. John of Jerusalem. Over his

plate armour and mail gussets he wears a long mantle with the cross flory on the breast. This cross flory is taken to be the badge of the Order before it was done away with some three or four hundred years ago. The Order was first suppressed by Henry VIII.; it was revived for a short period by Queen Mary with Sir Thomas as Lord Prior, and has been again revived within recent years. Mr. Hope, who described himself an humble squire of it, expressed regret that when the Order was last revived the badge adopted was the so-called Maltese Cross instead of the graceful cross flory. The monument was, he added, one of a large class in the Midlands of alabaster tombs, distinguished by their twisted angle-pilasters and the armorial shields. It would be, as Mr. Hope remarked, very interesting if anyone could find evidence as to the precise locality of the workshop from which they all came. The procedure of purchase must have been very similar to that in a monumental mason's shop or yard at the present day. The customer selected his kind of monument out of those in stock, and gave instructions as to the armorial bearings to be added and perhaps as to the effigy. This extremely prosaic method of business was prevalent in the thirteenth as well as in the sixteenth century, and was probably applied to the purchase of the Purbeck marble knight now lying in the north chapel. The fact that this warlike armoured figure (who is either drawing or sheathing his sword) has his legs crossed must not, we are now told, be taken to indicate that he was a Crusader. The less romantic explanation is offered that at the time of its erection it was the "thing" for effigies to have their legs crossed, and that consequently the "ready-mades" would quickly show it. The chain armour is here rendered with some minuteness, and among other things shows how the leather-lined piece, which fitted as close to the head as a woollen Balaclava helmet, was fastened at the left ear by a kind of hair-pin; in some cases it was laced to the lower piece.

RUSHTON HALL.

The earliest parts of Rushton Hall were built by a John Tresham about the year 1500, after the estate had been in the family for seventy years; his great-grandson, Sir Thomas, made additions and alterations in the year 1595. This Sir Thomas was a great builder in the neighbourhood, having erected, in addition to what he did here, the Market House at Rothwell, the Triangular Lodge at Rushton, and Lyveden New Building. Fuller says of him: "Hard to say whether greater his delight or skill in buildings, though more forward in beginning, than fortunate in finishing his fabricks." His building activities were doubtless much hindered by his frequent periods of imprisonment. His son and heir, Francis, was implicated in the Gunpowder Plot within two months of his succession, and the estates were confiscated. Rushton was bought in 1619 by Sir William Cokayne, who much enlarged the house and gave it its present appearance as viewed from the east and west. The Cokaynes became Viscounts Cullen and continued to live at Rushton until the beginning of the nineteenth century, when the property was sold. Since then it has passed through several hands and has suffered from fire. The interior has been entirely remodelled, and retains of the old work nothing except the ceiling over the staircase, a doorway, also on the stairs, a fine chimney-piece of Sir Thomas Tresham with his armorial bearings, and a plaster relief of the Crucifixion in the oratory. Of the exterior, the south front was built about the first quarter of last century, with very satisfactory results; the north or servants' side is also modern. The west and east fronts and the courtyard are mainly the original work, and are of most remarkable picturesqueness and dignity. The hall is now in the occupation of an American millionaire, and at the time of our visit was undergoing some works of internal alteration or decoration. It is to be sincerely hoped that his enthusiasm will not lead him into any ill-advised work. Every room appeared to be in "apple-pie" order last week.

RUSHTON LODGE.

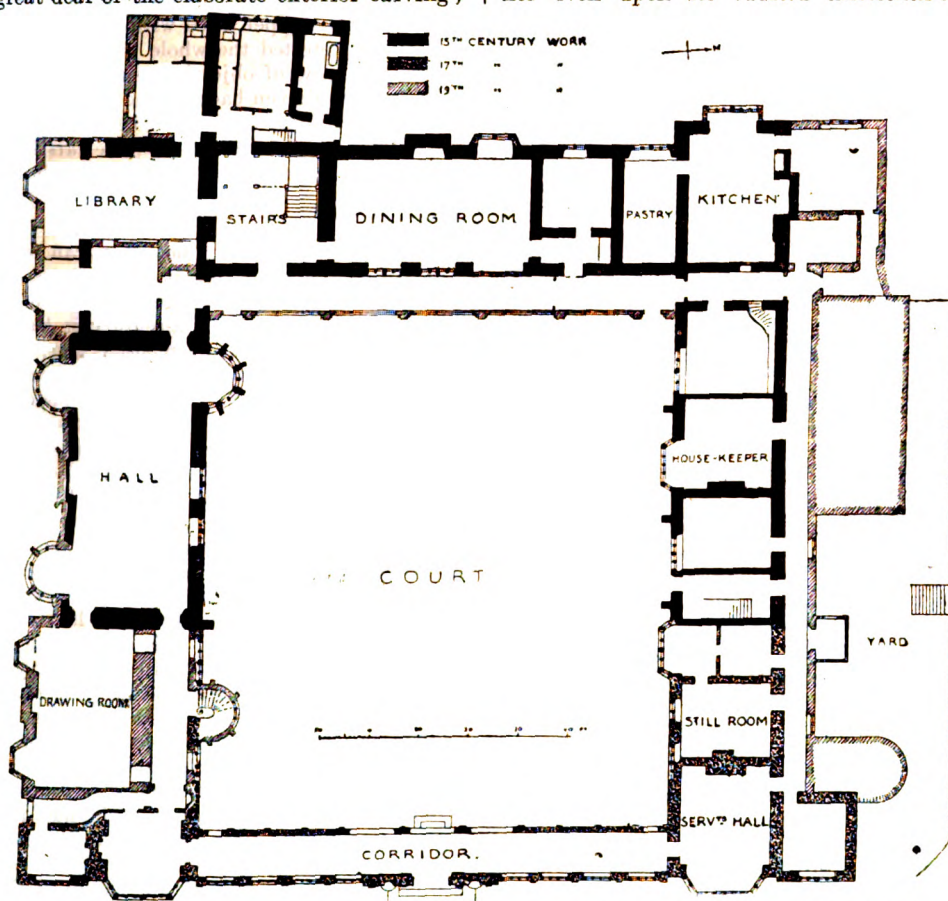
The Triangular Lodge at the extreme corner of the grounds attached to Rushton House is not to be confounded with the freak buildings or "Follies" which dot the country. It is rather a demand in stone for liberty of conscience and a defiance of bigoted oppressors. Its builder, Sir Thomas Tresham, belonged to an old Catholic family, which had possessed the Rushton estate from about 1428. Sir Thomas was brought up as a Protestant, but three years after his knighthood at Kenilworth in 1577 he returned to the Old Religion. From that time until his death, twenty-five years

later, he was subjected to constant persecution, and is said to have paid each year £260 in fines as a "Popish recusant." The Triangular Lodge was finished just ten years before he died in 1605. It is designed in units of three. The ground plan is an equilateral triangle, of which each side measures 33 ft. 3 in. There are three storeys internally—viz., the cellar, ground floor, and the upper floor, and three windows in each storey; there are three gables on each face; the three Latin inscriptions consist of thirty-three letters; there is a central three-sided chimney shaft, whose sides are decorated with trefoils. The symbolism of it may be explained in Sir Thomas Tresham's own words, for a letter from him on the subject was found among other papers at Rushton about ninety years ago. "If it be demanded," he writes, "why I labour so much in the Trinity and Passion of Christ to depaint in this chamber, this is the principal instance thereof: That at my last being hither committed (i.e., at Wisbech Castle), and I usually having my servants here allowed me to read nightly an hour to me after supper, reading in the treatise of *Proof there is a God* there was upon a wainscot table at that instant three loud knocks as if it had been with an iron hammer given; to the great amazing of me and my two servants." The symbolism is continued in a great deal of the elaborate exterior carving;

models. It is sometimes tentatively ascribed to John Thorpe, who supplied the design for the same knight's "New building" at Lyveden. The structure was never finished, and was indeed as to its interior little more than a ruin when the district council restored it in 1897 under the guidance of Mr. J. A. Gotch, F.S.A., F.R.I.B.A., as a Jubilee memorial. The open ground floor was then converted into offices, and the upper into a free library. Mr. Gotch, in his book on Early Renaissance architecture, puts forward the interesting suggestion that in this building the first English attempt was made to improve on the awkward circular staircase built of stone or brick. Although circular on plan, it seems to have been an intermediate type between the stone corkscrew staircase and the straight flight of wooden stairs which succeeded it quite suddenly. In France a step forward had been already made by increasing the width and decreasing the depth of the risers and by introducing more frequent landings. At Rothwell a considerable width of step was intended, though no remains of it exist.

ROTHWELL CHURCH.

The interest of this church does not by any means depend upon the claim that it is the longest in Northamptonshire, nor even upon its vaulted thirteenth-century bone-croft,



[By permission of Messrs. B. T. Batsford.

RUSHTON HALL.—From Gotch and Talbot Brown's "Architecture of the Renaissance in England."

in some cases it is so involved as to baffle explanation. Over the entrance doorway, for instance, are the figures 5555. A complete diary is in existence, which gives the progress made on this singular work each week. The shields round the frieze show the arms of the Treshams and their intermarriages.

Rushton is about five miles distant from

ROTHWELL MARKET HOUSE.

If Sir Thomas Tresham allowed his fancy free rein in the design of the Triangular Lodge at Rushton, he had already given, in 1578, undeniable proof of his good taste a few miles away in the charming market house at Rothwell. The Latin inscription running round the outside suggests, however, something of an original mind. It narrates how the building was erected by him, and that "he sought nothing but the public good and the honour of his friends, and that he who wilfully mistakes the builder's intention is unworthy of so great a benefit." The honour of his friends is perpetuated by the numerous shields on the cornice and elsewhere of the principal Northamptonshire families at the time of its erection. In design it may be regarded as a most successful example of a country mason's endeavours to imitate classical

where are stacked the mortal remains of many hundreds of people. It has a rare and aristocratic beauty of its own. To the archaeologist it offers the fascination of a half-revealed mystery. As Mr. Hamilton Thompson remarked, its history is perhaps the most difficult to read in the stones of any of the twenty-odd churches on the Institute's programme. Like most of the others, its original plan has been altered almost out of recognition. The plan of the twelfth-century church was cruciform with, probably, a central tower; there are indications that the chancel had a south chapel. In the last years of that century and in the beginning of the thirteenth a general rebuilding was carried out. Some forty or fifty years later a tower was added to the west end, and the nave arcades were raised to about twice their former height (the old capitals and arches being retained), the aisles were widened, and the crossing heightened. Fifteenth-century work included "improvements" such as the stone vaulting of the tower, and the remodelling of the nave, clerestory storey, and east window. There are two brasses in the chancel. Mr. Thompson suggested that the bone hole may have been built as a charnel chapel. When this crypt was brought to light about 1700 it was found to be

filled with human bones. The local tradition that these belonged to the soldiers who fell at Naseby is rendered difficult of acceptance from the fact that that momentous battlefield is some miles away.

Thursday, July 25.

An early start was made in a special train which left Northampton at 9.5. Then, after a motor journey, the party at 10.30 reached

LIDDINGTON BEDE-HOUSE.

This is a building which could not fail to delight for its homely picturesqueness. An excellent idea of its front was given in our sketch on p. 50 last week. Mr. Hamilton Thompson described it as one of the most interesting mediæval houses in England, being practically untouched except for a little seventeenth-century modification. It belongs for the most part to the late fifteenth century. The Bishops of Lincoln established a manor house here in comparatively early times. St. Hugh of Lincoln gave the church of Liddington to be a prebend of that cathedral; and its bishops were very fond of living here in the Middle Ages. It had the additional recommendation of forming a half-way rest between the cathedral city and their favourite Oxfordshire residence. Another advantage was that it formed a very convenient centre where the clergy might come to be instituted. The house appears also to have been sometimes used by the prebendary of Liddington. Bishop Burghersh (1320-40) had licence in 1331 to enlarge and wall his park here, and in 1336 had licence to crenellate his house. The existing building appears to have been commenced by Bishop Russell (1480-95), and completed by Bishop Smith (1496-1514). In plan it follows the ordinary arrangement of a mediæval dwelling-house of the larger type. Its great hall and living-rooms were on the first floor, while below them were the offices and servants' quarters. At one end of the hall was the solar or private apartment with a narrow passage leading out of it to the bishop's bedroom; at the other were certain rooms which were probably used for the accommodation of the guests. The hall has a flat ceiling of no great height; possibly this is a later insertion of the sixteenth century. There is much old stained-glass in the windows. The building was converted into a bede-house for a warden, twelve poor men and two women by Thomas, first Earl of Exeter, who died in 1622.

Mr. Francis Bond, in describing this building as a most remarkable one, suggestively remarked that one can see churches by the hundred, but that there are only two or three places like Liddington Bede-house existing in this country. A most conspicuous feature of the hall ceiling is its wonderfully carved cove. This, as Mr. Bond pointed out, is an imitation in wood of the fan vaults which grew so much in favour during the fifteenth century after their first introduction in Gloucester Cathedral. This was put up by Bishop Smith, who in so doing probably lowered the height of the apartment very considerably. Mr. Bond put forward his suggestion that the hall may at one time have been carried to the full height of the building. Certainly the existing arch-braced roof in the attics deserved to be seen by some one more important than sleepy servants.

LIDDINGTON CHURCH.

The Bede-house stands close to the church, and to the south-west of it. The chancel, tower, and low spire are of the first half of the fourteenth century, the exact date being apparently between 1320 and 1340, when Bishop Burghersh carried out various works at the adjacent manor house of that time. As lord of the manor he would probably defray the expense of the tower, while the charges for the chancel would be defrayed by the prebendary. The east window contains that reticulated tracery which is common to much fourteenth-century work in Northamptonshire and Rutlandshire. The naves, aisles, and clerestory are very good fifteenth-century design. Objects of interest are the low side windows, some elaborately carved stone coffin-lids in the south aisle, a handsome rood screen, with traces of colour, and two fifteenth-century brasses (one with a later inscription). A curious feature of the chancel is the complete enclosure of the altar, which stands well away from the east wall, by Communion rails. These have remained in position since 1635, and are most interesting from an historical point of view as marking a phase of religious opinion which has left few structural traces behind it.

The presence of the low side window provoked interesting expressions of opinion as to its uses. Mr. Thompson remarked that both the theory of their being inserted to allow

of lepers in the churchyard participating in the services or of their being used as confessionals were alike untenable. The most feasible explanation to offer is that they were built for the purpose of allowing a bell being rung from within the chancel at the solemn moment of the Sanctus. Mr. St. John Hope strongly supported this theory of the sacring-bell as being the only common-sense explanation. The confessional theory could, he said, be put out of court by mentioning a few examples where such a use was a physical impossibility. There were instances, as at Kidwelly, where chapels with low side windows were placed on the first floor. At Lee Castle, Kent, there is an upstairs chapel with two low side windows which look over the moat. With regard to the leper theory, it seemed to be imagined by some people that lepers were allowed to roam at large over the country, and that they spent their time staring into churches. As a matter of fact, these unfortunates were strictly looked after, elaborate provision being made for their isolation in lazars or other places. Another suggestion sometimes offered was these windows were made for putting a lighted candle in for the purpose of scaring away the evil spirits which haunted the graveyard. Against that it might be remarked that many of them were obviously intended to be divided horizontally—the lower portion being fitted with a screen and the upper filled with glass. If, however, a candle was to be protected the whole window would be protected by glass. In view of objections such as these, Mr. Hope said that one was driven back on the theory that they were meant for the ringing of the sacring-bell.

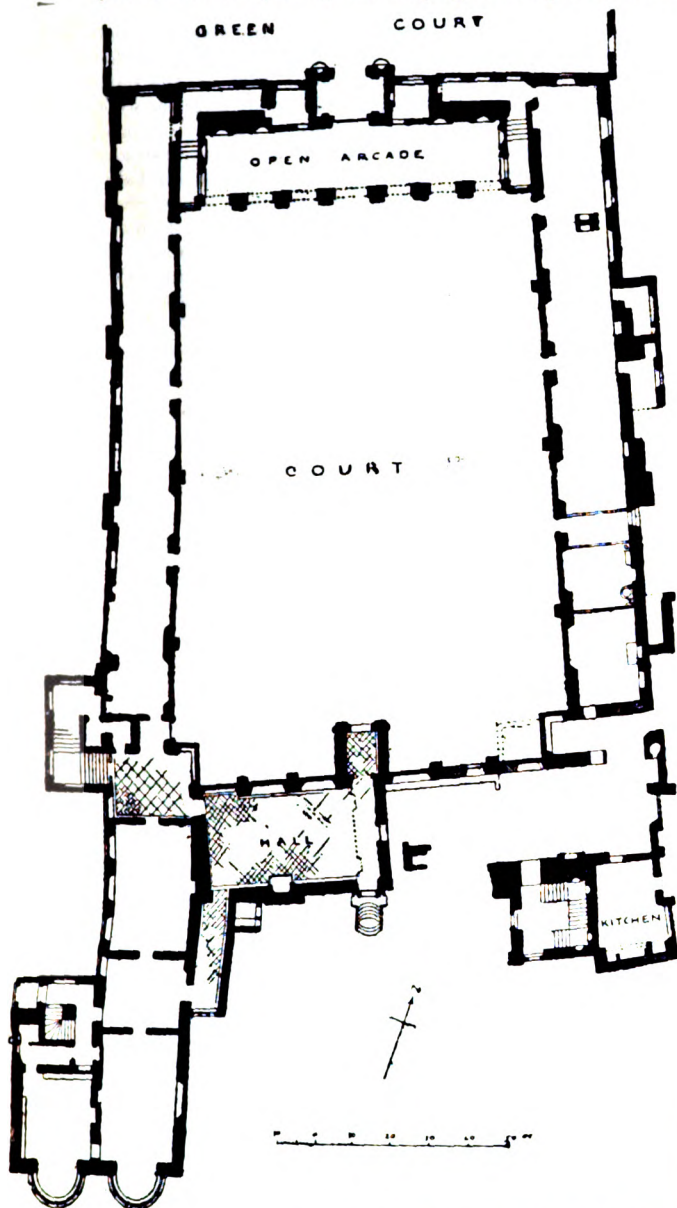
After a fifty minutes' ride, the cars had to be left and a field path followed for a third of a mile, as an indirect approach to

KIRBY HALL.

Few architects or archaeologists can require an introduction to Kirby Hall, for it has perhaps been more written about of late years than almost any other building in this country. For over half-a-century it has been little more than a roofless shell. If report is true, it was the recklessness of an ancestor of Lord Winchelsea which brought about this shameful neglect. At one time there was a village and a church at Kirby; of these no traces exist. The Hall was apparently erected, said Mr. Gotch in describing it, entirely new—i.e., without including any existing house. It was built by Sir Humphrey Stafford of Blatherwycke. Why he came to Kirby has never been explained. The house owes its general character to John Thorpe, whose plans are still in existence in the Soane Museum. Although the court looks perfectly rectangular, it is really askew, and so it appears on Thorpe's plan. On that plan he recorded that the first stone was laid in 1570. This is borne out by the dates on the gables of 1572 and 1575. In the latter year Sir Humphrey Stafford died. His heirs sold the property to Sir Christopher Hatton, the Chancellor, who had commenced for himself a much larger Northamptonshire mansion at Holdenby. Of Holdenby there is practically nothing left but a few arches. For some years Sir Christopher never came near Kirby. In 1580 he writes in a letter that he had determined "to take my pilgrimage to Sir Ed. Bricknell's to view my other shrine, I mean Holdenbye, still unseen, until that holy saint may sit in it, to whom it is dedicated." The saint referred to is Queen Elizabeth. In the seventeenth century its then owner called in the help of Inigo Jones to modernise the house. Inigo Jones refaced the whole of the north front, added an attic storey, and inserted some new windows. Very little further work was carried out during the occupancy of succeeding owners. The last who lived here died in 1822. For the next ten years it was utilised as an agent's house. But, alas! since the middle of the 'thirties the story of the building has been one of stealthy decay until the undoing of the mischief is almost beyond private means. Perhaps some day this beautiful building will become a national possession. There are, however, from time to time rumours of its acquirement by some American millionaire or other. It is only a modern Cressus who could afford to have it all made worthily habitable.

Mr. J. A. Gotch, in his book on "Early Renaissance Architecture in England," points out that at Kirby Hall there is a determined attempt at a symmetrical treatment. The entrance gateway and the "screens" of the great hall are on axial lines running through the house and its court. The inner court is absolutely symmetrical, door corresponding with door, window with window; but the exterior façades have been somewhat left to take care of themselves instead of being carried out according to John Thorpe's orderly plan.

The south side of the court was occupied by the great hall, with at one end its winter parlour, kitchen department, larders, pastry and surveying place; at the other, or dais, end were the splendid family apartments and grand staircase. The long and narrow east and west wings were on the ground floor occupied by the lodgings arranged as a series



[By permission of Messrs. B. T. Batsford.
KIRBY HALL.—From Gotch and Talbot Brown's "Architecture of the Renaissance in England."

of intercommunicating groups of two or three rooms each. The first floor of the west wing served as the long gallery. On the north side is the first English instance of the open terrace or loggia, then fashionable in Italy. The detail is, says Mr. Gotch, unusually fresh and free, and has more variety than Elizabethan masons generally bestowed upon their work; the gable over the porch in the courtyard has no counterpart in England.

Luncheon was taken in the great hall, which still retains its carved ceiling and minstrels' gallery.

(To be continued.)

ROYAL SANITARY INSTITUTE CONGRESS AT YORK.*

In many of their works the respective provinces of the engineer and the architect are clearly defined and well separated; in many respects they are tangential and in some they overlap, or at least have their interests so interwoven that it becomes highly desirable that they should co-operate upon lines and in circumstances of mutual agreement and understanding. In affairs of the last class there falls one of the greatest

* Abstract of Presidential Address by J. Walker Smith, M.Inst.C.E., Chief Engineering Inspector, Local Government Board, Scotland, to the section of Engineering and Architecture.

importance in the work that arises from the operation of the Housing and Town Planning Act of 1909.

It must have been a source of satisfaction to all who have at heart the advancement of the science and art of city development that the British Government should have appointed a commission of engineers and architects to co-operate and collaborate in planning the city of Delhi. This is an example which I feel may, with very great profit and advantage, form a precedent for the future.

This work of town planning, of which we have such excellent examples in our country, and the absence of which, too, is exemplified in many deplorable instances, will need, and will receive, careful consideration from those of the engineering and architectural professions who feel drawn to specialise upon it.

There is already great public interest in the question of housing and town planning, and it is a little surprising that it is not even greater, for it should form common ground and a common interest for so many. The improvement of the housing conditions of the working classes, the abolition of slums, and precautionary measures, by means of town planning schemes, which will preclude the possibility of their recurrence, are objects that may well be common ground for all students of sociology, and for all who have at heart the uplifting of the race. Church and laity may join, and all shades of political opinion can unite in this cause: creeds and politics have no place in this work.

Better housing conditions, which will bring in its train a brighter home life and a better standard of life, is a step in the direction in which all desire to move who have at heart the improvement in the condition of mankind. This movement beneficially affects both the well-to-do and those less favoured by fortune. The well-to-do can perhaps efficiently house themselves, but town planning will affect them, as it will provide for a town development upon lines that make for improved sanitary conditions and amenity, and will induce the wealthy and prosperous citizen to reside in his town, to take his share in the assessments, in the management, charities, social work, and administration of his town. A community often suffers much from the exodus of its prosperous and capable citizens, of whose assistance and support it is thus in great measure bereft.

The thrifty and fairly paid workman in regular employment will appreciate better housing and a better standard of life. The thriftless, but well-paid (and there are many such), who does not appreciate the idea of improved housing and of a higher standard of life must be educated to appreciate and demand the better housing and better conditions of life for which he can already afford to pay.

Then follows the class, all too large, whom it is difficult to efficiently house. It includes those whose employment is casual, whose wages are small, whose physique is indifferent or bad, whose mental and moral condition leave much to be desired. This class may need careful selecting and segregation, as one solution will not be found for conditions which are so complex and so difficult to fully appreciate as those which govern this problem. It is possible that some may be trained and fitted for some other sphere of life, where better opportunities await them; others, again, on account of some mental or physical defect, may never be able to fight their own battle in life, and will need consideration upon special lines. But most of them will be required, and must remain where they are, in the centres of industry, and should therefore be provided with better housing conditions (and be educated to an appreciation of them), where they may lead a brighter life, and where they may bring up happier and healthier children. So far, and it is considerable, as engineers and architects are able to assist in the solution of this great and complex problem, they will use their skill in a good cause and earn the gratitude of all right thinking men.

We shall come face to face with the housing aspect of this problem in the set subject for discussion of our section, viz., "Modification of the Model By-laws from the rural point of view," which will be opened by Mr. Halsey Ricardo, whose knowledge of this subject is well known.

There is no doubt that the problem of rural housing is becoming particularly acute, and that all unnecessary restrictions must be removed, and all possible facilities rendered to enable efficient and sanitary housing conditions to be provided in our rural districts.

There is already power given under Section 44 of the Housing and Town Planning Act of 1909 to revoke unreasonable by-laws in connection with the erection of dwellings for the working classes. There is also given to local authorities under Section 55 (2) of the same Act somewhat drastic suspensory powers in connection with by-laws where

the local authority prepares or adopts a town-planning scheme. This power may be of very great use, but in order that it may be made available, it is necessary that a town-planning scheme be prepared and approved, whereof suspension of by-laws would form part, and would be shown to be in the circumstances, and having regard to the general scheme, reasonable and desirable.

In circumstances such as these, there is permitted the full consideration of special conditions and local circumstances which would be denied with by-laws of rigid application.

Some might think that suspensory powers might be granted without the necessity of preparing a town-planning scheme, whilst others would apprehend thereby confusion and resulting detriment to the public health and safety.

HOUSING AND TOWN-PLANNING PROGRESS.*

THE Housing, Town Planning, &c., Act, 1909, received the Royal assent on December 3, 1909, and has now been in force two and a half years; but not until the Local Government Board published their code of Regulations under the Act, on May 3, 1910, could any progress be made.

Since the promulgation of the Regulations under the Act in May, 1910, many conferences have been held, and many papers have been read before various learned societies and professional Associations; the present writer has been privileged to attend several of them, and the outstanding feature has been the remarkable difference in local circumstances. The area to be dealt with may be purely agricultural land worth £50 or less per acre, or it may be ripe for building purposes and worth £500 per acre before the roads are made, and from £800 to £1,250 per acre afterwards, or at any intervening price. The area may be one where the roads are already arranged or even partly constructed, the scheme being required to preserve the amenities of the district and prevent the erection of factories alongside already occupied villas; or it may be one where the roads are not constructed nor even set out, and the landowner unable to deal with the financial part of the work without outside assistance. The area may be one where the landowner is willing to have the number of houses limited to eight, or ten, or twelve per acre; or it may be one where the lower working-class is to be housed at a rental of 4s. or 5s. per week, and the number of houses per acre has to be thirty or forty to recoup the builder for his outlay and leave the margin required by the landlord to cover ground-rent and road-making. (It is certain that small houses must be allowed, otherwise two or three families will inevitably arrange to occupy one house, and the interior of the house will be a slum, whilst the exterior is everything that could be desired in a garden city.)

From the point of view of a local authority (which includes the departments of the medical officer of health and the surveyor, as well as that of the ratepayer), town planning is in theory the only thing; there is no alternative. But if, after laying down a scheme, the land is not taken by builders and covered with model houses the landowner is injured and houses are erected on other estates with less salubrious surroundings, all the labour expended in preparing the scheme being thrown away. From the point of view of the builder, the investor, and the landowner, the whole question is one of finance, and for any great progress to be made the question of finance must be carefully considered.

Where land is worth £50 per acre, a ground rent of less than one penny per yard per annum will cover both the value of the land and the cost of street-making; and at this there is no difficulty either in keeping the number of houses per acre down to ten or twelve, or in providing a decent sized piece of land even for the smallest type of house. Where land is worth more than £500 or more per acre, the ground rent will need to exceed 2d. per yard per annum to cover both the value of the land and the cost of street-making on model by-law lines. Therefore, to bring the estate within reach of the working man either a large number of houses per acre must be allowed, or there must be some relaxation of the model by-laws as to streets and buildings, a power which is specially provided by Section 55 in conjunction with the fourth schedule of the Act. At any intermediate price between £50 and £500 per acre the problem varies in ratio to the price plus the cost of street-making. It is for local authorities, when preparing town-planning schemes, to consider what relaxations they can consent to in return for healthier surroundings and amenities.

First, then, with regard to streets. The model by-laws generally prescribe that a street shall be 33 feet, 36 feet, 40 feet, or even 50 feet in width under certain conditions, that the streets shall be properly sewered, made, kerbed, channelled and flagged, the cost of which works out at from £2 to £3 per foot run according to width and nature of materials. It was suggested at the Town Planning Conference held in London on April 24 last to divide the streets into two classes, according to traffic: (a) to construct main roads from 70 to 100 feet in width, arranged and constructed to take all the traffic ever likely to come over them; and (b) to arrange the secondary roads so as to discourage or prohibit "through" traffic, to be only available for access to houses, and to be constructed accordingly very much narrower in width, less substantial in construction, and, possibly, not provided with either kerbs or channels, the footpaths being provided with only one row of flags instead of being flagged the whole of their width. In the discussion which follows this paper it is desired to elicit opinions on the foregoing suggestion, and as to what is the minimum construction that should be allowed; also the liabilities that may devolve upon future generations of ratepayers if any portions of the street (kerbs, channels, or footpaths) are not now constructed.

Secondly, with regard to buildings. The model by-laws with regard to buildings are not very onerous, except with regard to brickwork; and this is not felt so much in London as it is in the northern and midland counties, where bricks are so much better in quality than in the metropolis. The carrying of party walls through the roof is quite unnecessary for two-storeyed houses; a 9-inch wall might be allowed 30 feet or 32 feet high instead of only 25 feet; the 18-inch open channel between the slopstone pipe and the gully might be dispensed with; but with the exception of these there is not much to complain of, and it is difficult to see what relaxations can be allowed in the model code. It is certain that the erection of small houses as detached or semi-detached villas adds to the cost in many ways: there is an extra gable wall, with its foundations and slating; an extra footpath alongside the gable; an extra length of front and back and party fence, and other items. On this point it is desired also to elicit opinions as to what economies in building may be made, and what relaxation of by-laws should be allowed.

It may be pointed out that if there are no relaxations of by-laws, and if landlords will agree to lay out their estates on town-planning lines, providing wider streets for "through" traffic, and allocating a portion of the estate for park or recreation ground purposes (either by gift or sale to the local authority), there will be no need to lay the scheme before the Local Government Board, and many valuable months will be saved, in addition to an enormous amount of office work.

Finally, it must be remembered that the dreams of the idealist must be transmuted by the alchemy of common sense into something practical before they can serve as a basis for town planning and the laying out of garden cities.

After the reading of the paper the following discussion took place:—

Mr. F. W. Spurr (city engineer, York) said the subject touched on must concern every surveyor and municipal authority exercising the powers of the Town Planning Act, and for this reason the paper before the section must be very valuable. He felt quite sure that economies could be brought about in street construction, varying in amount with the particular form of construction adopted. In York the method of private street construction consisted of laying the footways with 3-inch Yorkshire flags, 12 by 8 inch kerb, and paved channels 14 inches wide, whilst the carriage way was constructed of either 9-inch stone pitching or 6-inch concrete, finished with 3-inch tar macadam the full width between channels. By adopting the following method of construction a saving of about 30 per cent. could be made, and he might say the Corporation agreed to this amended method of construction provided the width of the street was not less than 42 feet and the distance between the houses themselves 62 ft., with footways constructed of tar paving, composed of limestone chip-pings in place of 3-inch Yorkshire flags, 10 by 3 inch kerbs, in place of 12 by 8 inch, and channels 8 in. wide instead of 14 in. With regard to the carriage ways in residential streets, he did not advocate any alteration in the form of construction beyond reducing their width to about 16 feet, the remaining width being grassed and planted. With regard to economies in cottage construction, he did not think much could be done unless some other form of construction was adopted, but there could be no doubt that to build at the least possible cost cottages must be erected in blocks of not less than six. Some saving in cost could be effected where by-laws provided for

* Abstract of Paper read at the Royal Sanitary Institute Congress by Mr. H. Gilbert Whyatt, Assoc.M.Inst.C.E., Borough Engineer and Surveyor, Grimsby (Member).

carrying the party walls through the roof, a precaution which he thought was unnecessary; and something might also be saved by an alteration in the thickness of walls of two-storey cottages, as suggested by Mr. Whyatt.

Mr. Moulding (Exeter) said he agreed with Mr. Spurr's remarks. As the author had pointed out, all these things had to be considered in regard to the particular town one was engaged in. In Exeter they allowed, in certain streets where there was not much traffic, gravel footpaths, and they used granite because it was cheaper. In the carriage way itself they did not insist on 6 inches of concrete. He thought it would be a very good thing if they could get landlords to do that, so far as the future upkeep of the roads was concerned, but it was rather a big thing to ask an owner to do so. He considered that almost any uninhabited room attached to a house could be built in the way suggested by the author. In Exeter they had a new set of by-laws, and in the case of gable walls, &c., the extra thicknesses were modified.

Mr. Matthews (Bridlington) said he agreed with the author that local circumstances differed very considerably, and what would be very effectual in one district in regard to the method of town planning would, in another district, be quite impossible. His district was a residential one, and as he sat there he had been trying to imagine how greatly such a district differed from a place where the area for town planning was purely an industrial one. It was incumbent, therefore, on them, as surveyors, to make the best they could of the towns they lived in, and not be guided to too great an extent by what was being done in other places. The author said that it was certain that small houses must be allowed, or otherwise two or three families would arrange to occupy one house, and turn it into a slum. He did not agree with that. At Doncaster quite recently the Town Council presented a scheme of housing to the Local Government Board for approval, and at the inquiry it was elicited by the inspector that the class of people for whom the houses were intended had been paying 3s. or 3s. 6d. a week rent, whilst it was proposed to charge 5s. for the new houses. He said at once he could not recommend the Board to approve of that, and that they must draw out fresh plans showing houses to be occupied by two families, and each family to be charged 3s. a week. He did not think people would be less inclined to keep half a house in a sanitary condition than a whole house. As to the saving in the cost of road making, he certainly thought in any town planning scheme many of the roads over which there would not be a great deal of traffic should be of less width than was generally provided. In Bridlington a street had, according to the by-laws, to be 40 feet in width, but where there was not much traffic it might be 30 feet, which should be divided up into 16 feet roadway, 3 feet grass and turf on each side, and a 4-foot footpath each side. He did not agree with the suggestions made at the Manchester Conference that the road should be of very light construction, because very heavy traffic might occasionally come on them, such as furniture vans. He would have a good foundation for the road, but personally would prefer it paved with tar macadam.

Mr. Munce (Belfast) said they had not got the Town Planning Act in Ireland, although he took a great deal of interest in the subject, and generally he agreed with the remarks in the paper, although there was one thing that he thought was lost sight of. They seemed to forget altogether who were going to live in the houses and the wages the people would receive. Unless they thought of this many of the schemes which were full of fads would not succeed. In Ireland they dealt differently in the matter of land. They did not buy the land to build houses, but took it on leases, the duration of which varied from 999 years to 10,000. A man invested his money in the land, and made the streets and put in the sewers, and he then let the land at rents varying from 3s. to 4s. a foot frontage. The smallest houses were 12 feet frontage, but most were not less than 13 feet, so that the ground rents ran from 39s. to 52s. per year. These ground rents were then sold at from fourteen to twenty years' purchase. He believed that the best plan was to keep the centre of the town for commercial purposes, and take the people out in the country by tramway, even if they ran the tramways free. Grass plots by roads were all very well in theory, but in a few years they became a piece of clay. He thought a workman's house ought to be built for £100.

Mr. Cass (Farnham) asked why it was always considered that houses and cottages should face a road. It was this idea which added so enormously to the cost. He considered that they might so arrange them with pathways so that all the sunlight possible could be obtained. By insisting on road frontages it meant that they got houses backing on one

another. He was prepared to admit that the carriage way should be decently made and fairly strong, but one thing had impressed him very much, which was the enormous amount of waste in kerbs. He had known suburban districts where there was nothing but a furniture van in the way of traffic, with kerbs of 10 by 12 inches. If engineering meant anything it was the putting of the right thing in the right place, but in many districts of London the heaviest kerb was put down; and from the engineering and æsthetic point of view it was absurd. It was not only a great waste of money, but a great waste of appearance.

Mr. Whyatt, in reply, said they certainly could not build houses in England for £100, whatever might be done in Ireland. The smallest four-roomed house could not be built under £140, whereas if they had three upstairs rooms, which were certainly necessary, the lowest cost would be £165 or £170. Personally, he was inclined to think the grass strip was a mistake. He also agreed that it was not necessary that every cottage should face a street, but where they were building cottages in pairs or singles the cost of the gable walls and extra fencing would increase the capital cost. Although in theory there was no reason why two families occupying a house should not keep it well, yet in practice they found the tendency was to create an interior slum.

IN PRAISE OF SLATES.

By CLOUGH WILLIAMS-ELLIS.

(Continued from last week.)

WHEN a workman complains of his tools we don't confine our search for faults to his outfit; and anyone who, being forced to admit the structural superiority of a building material, is yet afraid to use it, is nothing of an architect and only half a man.

And the limitations of a material must be recognised no less than its capabilities. It must not be altogether your slave, it must, indeed, be to some extent your master. You must design with constant reference to its peculiar characteristics, you must design in terms of it, in its own tongue, so to say. It must be allowed to look over your shoulder, and in some sort guide your pencil. For example, one might suggest more attention being paid to that excellent, economical and typically "slatey" form of roof that bears the name of its introducer, Mansart, the great French architect, slate having been usually his medium.

Good materials *cannot* be wrong in themselves, but they *can* be, and frequently are, wrongly used.

It is not enough that slate is good; it must be rightly used, with sympathy and understanding.

With the good, honest, well-burnt, hand-made, sand-faced clay tile, the most ardent slatite should have no quarrel. It is a worthy competitor, and has its own special preserves in certain parts of rural England that should be kept sacred to it, even as Wales, Scotland, and the North, Ireland, most of the West, and most of the industrial centres, should cleave to natural slate.

There are, too, certain small and favoured districts such as the Cotswolds, parts of Northants, Sussex, and Yorkshire, wherein a man may get his own rough slates wellnigh from out his very cellar. They are to be had for the digging and splitting of them a short yard below his garden cabbages.

Let them rejoice in their good fortune and their beautiful slates of stone, and use them wherever and whenever they can.

Also, there are other British slates than Welsh, and some are of great beauty, like the Westmorland greens, and not a few are of right good quality too, and where a passably good local material is to be had at a reasonable cost, it is always well to make use of it, if only to help preserve such little "local colour" as the railways have left to us.

But, if you cannot delve for good slates hard-by your buildings, and have to introduce your roofing from afar, see to it that while you are about it you get the *best* procurable.

And this is *truth*, it simplifies specification to remember it. There are *no* imported foreign slates that can

compete for quality, appearance, or value with our own native products, be they blue, grey, or green.

They do, indeed, sometimes contrive to worm themselves on to British roofs, these slightly cheaper and utterly inferior foreigners (Yankees being classed as foreign). Anyone who has seen, as he may see, Portmadoc roofs unblemished after two centuries of Welsh weather, and roofs of foreign slates replaced by Welsh after an ailing life of but three years, will not need much persuading to support home industries so far as roofing is concerned.

In their own respective districts there is nothing more suitable than a real good hand-made tile or a good stone slate, nothing *better* save a Portmadoc slate, which one would hesitate to introduce.

Even then, Nature-made slates would be less out of countenance than would man-made tiles imported into Wales, insolently flaunting it within sight of the very hills from which the world's best roofs are gotten.

And yet anyone travelling by the North-Western Holyhead route may see for himself the red leprosy that has now infected many of its watering places, screaming roofs of machine-made tiles fittingly surmounting buildings of raw pressed bricks, often in association with the sham half-timbering and shoddy rough-cast that make one suspicious of a multitude of sins to be covered.

Why cool, grey, substantial looking Welsh towns of native stone and slate should suddenly fall to aping the flashy vulgarities of Greater London passeth all understanding.

What is Balham that we should desire it? Tooting, where is thy charm?

For the shiney-faced, bright-complexioned, machine-made, snare and delusion tiles, no words are too hard.

They are but bastard kindred of the good old hand-made sort, and they outnumber him a thousand to one as the spotted fever of suburbia's roofs doth testify.

They are the jobbing builder's delight. The laying of a roof of them is an investment that will bring him in a comfortable return in the way of repairing jobs for the rest of his natural life, for he may well outlive every tile of the original roof. So even the machine-made tile has its friends and supporters.

The best Welsh slates have been formed, consolidated, and matured during incalculable ages under incalculable pressure. They cleave as thin as the hand of man can split them along their natural planes of cleavage, but being non-absorbent, weather and frost are powerless to hurt them. They only split to the chisel.

Their poor competitor, the machine-made tile, has, at best, a few moments under puny hydraulic pressure, sufficient, however, to ensure disastrous lamination if nothing else.

Their pedigrees make interesting comparison. The slate of ancient pre-historic, pre-glacial ancestry, and the tile, new risen from the mud.

To saturate such a tile and then expose it to frost is a pretty experiment. It is one that seldom fails to come off. Large flakes of it do the same along its laminations, and this disintegration once begun, the end is not far to seek.

Every improvement in at any rate the texture and colour of building materials has been brought about by the active agitation of the "texturist" architects. Most of the best men are amongst them, and it is odd that they have not yet bullied the Welsh quarry-owners into the production of a slate more architecturally acceptable than their present staple products.

True, they cannot get the *colour* changed to their fancy. No power on earth will change the age-old colour of a good slate, but they can choose their quarry, and patronise those only that produce rock of a pleasing shade.

The anathematised purple-blue slate is no cheaper than the pleasant Portmadoc grey and smoke-blue slates which are readily obtainable in any quantities.

(To be concluded.)

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE designs submitted by the under-mentioned candidate for the Final examination under the various subjects of the Revised Testimonies of Study have been approved by the Board:—

Subject II. (b.)—Mr. F. Radcliff.

Subject III. (a.)—Mr. F. Radcliff.

Subject III. (a.)—Mr. E. H. Gibson.

Subject III. (a.)—Mr. Wm. Voelkel.

Subject III. (b.)—Mr. Geo. Crossley.

UNIVERSITY COLLEGE.

THE following awards have been made in the School of Architecture at University College:—The Donaldson Medal to Mr. Oliver Gaunt; the Carpenters' Company Travelling Studentship to Mr. S. Miller; the first prize in the Advanced Design Class to Mr. W. G. Whincop, and the second prize to Mr. H. S. Taylor; the prize for measurements and sketches also to Mr. H. S. Taylor.

In connection with the arrangements for the Carpenters' Company classes for next session, the classes in design will be continued on Mondays and Wednesdays, the visitors being Mr. Leonard Stokes and Mr. E. P. Warren. Mr. W. H. Ward will give a course of ten public lectures on the French Renaissance.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Allied Artists' Association.

SIR,—My attention has been called to the letter in your current issue from the Secretary of the Allied Artists' Association, respecting no notice having been accorded to architectural work at the London Salon.

Is it not, Sir, a fact that the Secretary answers his own complaint? For he says that the architectural work is nil. How, then, *could* it be noticed?

However, he is not quite right, for as a matter of fact I did observe some few buildings; but by a fatal twist in my education they did not seem to me to merit inclusion amongst the good, whilst at the same time they were above being pilloried amongst the bad.—Faithfully yours,

THE ART CRITIC.

The Further Road Improvement at the Marble Arch.

SIR,—The ill-founded rumours that shops were about to be erected at the Oxford Street end of Park Lane has entirely overshadowed the fact that an important road improvement is about to be carried out there through the generous manner in which the Grosvenor Estate has agreed to set back the new building line of the proposed block of buildings at that corner.

In the original plan for the Marble Arch improvement, published in 1905, the rounding-off of the north-east corner of Park Lane, and the demolishing of the unsightly stables there formed part of the scheme, not only on account of the traffic, but also on æsthetic grounds. Although for a time I had to withdraw that portion of the scheme on account of the existing leases, no opportunity has been missed during the past seven years in pressing home its importance.

Oxford Street will now be widened at this point by 16 feet and Park Lane at its north end by 10 feet, the junction of the two thoroughfares being rounded off by an additional 27 feet being thrown into the public thoroughfare, which is exactly the extra space at this point that was asked for in the original improvement scheme. North Row, leading out of Park Lane, will also be widened by several feet. The ground the Grosvenor Estate is thus giving to the public is no less than 5,139 square feet, and I am advised by competent authorities that its freehold value is well over £60,000.

Although everyone who has the slightest knowledge of town planning will regret that the interested public authorities have not availed themselves of this opportunity to acquire further land at this point in order to give symmetry to the Place at the Marble Arch, yet I am sure all Londoners will desire to express their gratitude to the Grosvenor Estate for this generous gift.—Obediently yours,

F. W. SPEAIGHT.

July 26, 1912.

The Architect.

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FORTHCOMING EVENTS.

Saturday, August 10.

Sanitary Inspectors' Association : Meeting of North-western
Centre at Wallasey.

Monday, August 12.

Architectural Association : Annual Excursion commences at Shrewsbury (six days).

Saturday, August 24.

Architectural Association Camera, Sketch, and Debate Club :
Week-end at Winchester and Romsey.

Sanitary Inspectors' Association : Northern Centre Annual Meeting at Chester-le-Street.

Monday, September 2.

Northern Architectural Association : Students' Sketching Club.

BUILDING IN LONDON.

BUILDING in London is beset with so many regulations and restrictions, contained in close upon fifty Acts of Parliament and numerous by-laws, that an architect needs to be deeply learned in the law if he is to steer his client and his client's building safely through the intricate navigation of compliance with legal requirements. Not only is it necessary that he should be acquainted with the provisions of the many Acts of Parliament and by-laws, he must also—a far more difficult matter—understand what they mean. There is scarcely a statutory enactment made in this country as to which people do not disagree in the interpretation—sometimes from inaccurate comprehension, sometimes from the obscurity or insufficiency of the wording of the statutes themselves. Hence the architect's knowledge of the statute law must be supplemented by an acquaintance with the case law that translates into practice the enactments of the legislature.

Nor is a knowledge of the law alone sufficient. The architect must, when building in London, be cognisant of the jurisdiction of the various authorities by whom the law is administered. There are the Home Secretary, the Corporation of the City of London, the London County Council, twenty-eight metropolitan boroughs, the Tribunal of Appeal under the London Building Acts, the Metropolitan Water Board, and numerous gas and electric lighting companies, all of whom make regulations, often differing in form and import, that affect buildings.

It is therefore a necessity for the architect who designs buildings to be erected in London to be able to readily inform himself as to the laws and by-laws that regulate the construction of the buildings which he has to design, and it is of the highest value for him to have them collected and collated in a single volume, such as that * recently produced by Mr. Horace Cubitt, to whom the thanks of all architects practising in London are due. The voluminous character of the statutes and by-laws made under them affecting building in London may be gathered from the fact that in a book of 800 pages no less than 335 are occupied by a transcript of the enactments which have some influence, direct or indirect, on the development of land and the erection of buildings.

The scheme of Mr. Cubitt's work is well conceived. After an explanation of the various authorities and the areas with which they deal and of the scope of the principal Acts of Parliament, by-laws and regulations, the various practical questions of street formation, drainage, air space, construction, &c., are dealt with, each in a separate chapter, in which, as far as possible, the whole of the requirements of the law are included and explained. All the provisions of the Acts, by-laws and regulations which have reference to building work in London are given in full in a separate portion of the volume, and by an excellent system of cross-reference the text of the enactments referred to in the explanatory chapters is readily found, whilst accompanying the said text are references to the explanations. Thus one can obtain a general view of the law affecting any particular section of building operations, and easily refer to the actual words of the enactment concerned for fuller elucidation or for assurance of the correctness of the explanation given by the author. The case-made law is included in the explanatory chapters, and at the end of each subject division a list of the principal law-cases therewith concerned is given.

The Acts of Parliament quoted and recited in full range from Michael Angelo Taylor's Act of 1817 to the London County Council (General Powers) Act of 1910, whilst the by-laws and regulations given include (a) those applying throughout the County of London and referring to new streets, common lodging-houses, seamen's lodging-houses, petroleum, applications under Building Acts, cubical extent, &c., places of public resort, cinematograph shows, means of escape, Metropolitan Water Board, Tribunal of Appeal; (b) those applying throughout the county, with the exception of the City of London and referring to sewers, submission of drainage plans, drainage, water closets, &c., removal of refuse, slaughter-houses, dairies, cowsheds, milk shops, &c., building materials, &c., plastering, &c.; (c) those applying in the City of London only, and referring to house drainage, &c., water closets, &c., demolition of buildings, hoards and scaffolds, vaults, pavement lights, &c.

Despite the number of enactments and the many principal cases that have been decided in the Courts, it still remains an unfortunate fact that sometimes all that can be said is that the law is in an uncertain state, and that the obtaining of legal opinion is advised if interests of importance are involved, and Mr. Cubitt does not hesitate to point out when he considers such to be the case, for, as he says, it is to the advantage of the private individual to know in what respects the provisions of the building law are open to question. For example, there is no definition either in the London Building Act or in any

* *Building in London. A Treatise on the Law and Practice affecting the Erection and Maintenance of Buildings in the Metropolis.* By HORACE CUBITT, A.R.I.B.A., F.A.S.I., certified competent to act as District Surveyor in London, formerly of the established staff (Building Act section) of the London County Council. With special chapters dealing respectively with the Cost of Building Work in and around London, by H. J. LEANING, F.S.I.; and the Valuation, Development and Rating of London Property, by SYDNEY A. SMITH, F.S.I. (London: Constable & Co., Ltd. 31s. 6d. net.).

case decided by the higher Courts that clearly and completely answers the question, What is a building? Nor is there, as Mr. Cubitt points out, a sufficiently clear distinction between a domestic building, a building of the warehouse class, and a public building, and it speaks well for the commonsense of architects and district surveyors that there appear to have been no cases contested in the Courts with regard to these definitions.

The chapter by Mr. Leaning on the cost of building work in London includes a very valuable schedule of the price per foot cube and per unit of accommodation for a large number of various classes of buildings, both within a twelve-mile radius from Charing Cross and without that radius, but still in what may be considered the London district.

Mr. Sydney Smith's chapters on London property, its development, values and rating, although necessarily restricted in space, contain many valuable pieces of information that should be borne in mind by owners and investors, actual or prospective, as well as by their architects.

An excellent and voluminous index completes what we have no hesitation in describing as one of the most useful books ever produced for the architect who designs buildings in London.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

WE have received a satisfactory number of contributions to the work of the club for the first month of the new year, and hope that all the authors will be able to send in regularly so that they may have a chance of obtaining the Studentship next July, as persistency and consistency count higher than occasional brilliancy. The drawings sent in this month are of a very even standard of excellence, and we have had no little difficulty in awarding the prizes for the July subject. We are pleased to find that there is still, despite the fashion of the day in design, so much earnest study of mediæval architecture which, alike for its educational value as for its interest, should never be entirely neglected by British students of architecture. Although he may never have the opportunity of designing or restoring a church, the present-day architect will find his ability to help maintain the position of England in domestic work largely increased by a study of mediæval buildings.

"Plato" has drawn the south porch of the church of St. Peter and St. Paul, North Curry, Somerset, a good example of Perpendicular work with an excellent fan vault.

Mr. C. H. Roberts has selected a good example of Early English work in the north porch of Christ Church Priory, Hants, an interesting instance of a two-storey porch, with a choir-room on the upper floor. Mr. Roberts draws well, but his work would be more complete with one or even two sections, particularly on account of the vaulted lower storey, whilst the mouldings were well worth full size studies.

"F. M." has also chosen an Early English work for measurement, but has given us a doorway only instead of a complete porch from the parish church of Kirkburton. Full size mouldings are wisely given with plan, elevation, and section, but the inner arch and its relation to the actual door should also have been studied. On the plan of arch mould the line of abacus and impost mould should always be indicated, and in this case the nook shaft also, so that the arch mould may be studied with reference to its support.

"Improver" likewise has measured an Early English building, the south porch of the church of the Holy Cross, Ryton, Durham, an interesting simple little building, with a few details of later date. It is a pity the side elevation given is not that with the window. Our remarks on "F. M.'s" moulding sections apply also to "Improver." In Gothic work particularly mouldings should never be viewed as distinct entities but as components of a design having a definite relation to each other.

"Alpha," like Mr. Roberts, has found a two-storey building for his subject in the south porch of the church of St. Andrew, Bishop Auckland, county Durham. This is Early English work, and has been carefully studied and drawn with plans, two sections, two elevations, and details of mouldings. The vaulting of the lower storey is also properly shown, with true elevations of the ribs.

Mr. Gordon Hemm takes the south porch of Gawsworth Church for his subject. This is Late Perpendicular work, the date given by the author being 1500 A.D. Two elevations and full-size mouldings only are given, without plan or section. The drawing suggests an incomplete rendering or omission of the label moulding over the main doorway, and a detail of the niche is imperatively necessary.

Mr. W. Doddington's subject is a porch at Lower Basildon parish church, Berkshire, a flint and stone building of late thirteenth century date, which has been very thoroughly and completely measured and drawn by Mr. Doddington.

Mr. Eric Wiseman has measured and drawn one of the few timber porches of mediæval times still remaining, that at South Benfleet, Essex. Mr. Wiseman has done his work thoroughly, but his draughtsmanship needs more practice, and a thicker line would be advisable for Gothic work.

"Amo" has chosen the same subject as "Improver," the south porch of the church of the Holy Cross, Ryton, Durham. He has omitted the detail of some of the later additions, but what he has shown is well drawn. A section should have been included.

We have decided to award prizes of twenty shillings to "Alpha" and seven shillings and sixpence each to Mr. C. H. Roberts, Mr. W. Doddington, and Mr. Eric Wiseman.

ROYAL ARCHÆOLOGICAL INSTITUTE.

(Continued from last week.)

THE final visit on Thursday, July 25, involved a leap back of some centuries, for the motor-cars conveyed the party from the late sixteenth-century Kirby Hall to eleventh-century

ROCKINGHAM CASTLE.

One of the many admirable accounts given in the Institute's programme is that dealing with the above historic building. We cannot do better than quote it in full: "The castle, founded by William the Conqueror, followed the ordinary mount-and-bailey plan of early Norman castles. The lower portion of the mount remains at the south-east angle of the site, which was probably walled in the course of the twelfth century. The greater part of the mediæval work now remaining, including the gatehouse, east wall, and the fabric of the great hall, belongs to the thirteenth century. Much rebuilding was done early in the reign of Edward I, when the hall, great chamber, and other domestic buildings took the place of earlier structures. The present house, however, is a large mansion, with the thirteenth-century hall as its nucleus, chiefly of two periods. The block east of the hall, containing the dining-room and kitchens, was built in 1585 during the tenure of the castle by Edward Watson. The western building, at right angles to the hall, consists of north and south wings, with its central portion on the probable site of the cellar and great chamber. This assumed its present form in 1660, but appears to be a restoration of Elizabethan work rather than a complete rebuilding. The long gallery is on the first floor of the south wing. The revetting of the south and west sides of the hill on which the castle stands appears to be Elizabethan, but the sites of two of the drum-towers of the mediæval curtain wall are known. The original plan of the castle is not very obvious at first sight, owing to the encroachment of the south wing upon the outer bailey. The great hall, however, was on the south side of the outer bailey, between it and the inner ward, the greater part of which is now filled by additions to the house of various dates, enclosing a courtyard on three sides."

Mr. Hope said he would like to impress on those present the undoubted fact that Rockingham Castle was a new one at the time of the Norman Conquest. There was a quite erroneous idea abroad that many of the castles then erected had really a pre-Conquest origin. Rockingham was one of the great ones thrown up by command of the Conqueror

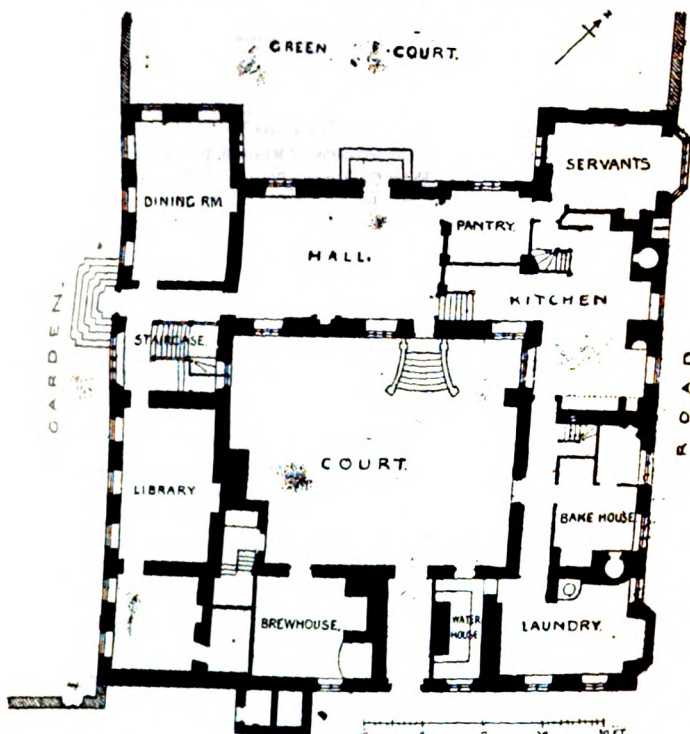
on strategically commanding sites to quell the surrounding population. Many of them were on a very much larger scale originally than they are now, as in this instance. After some years the wooden defences were in part replaced by stone walls, and, as their original object had been achieved, there was no need to preserve the same size. What they did here was to construct a tower on the mound and to enclose the inner bailey.

The party were subsequently entertained to tea by invitation of the Rev. and Mrs. Wentworth Watson. This extremely interesting castle has been in the possession of the Watson family since 1579. It is fitting that one of the mottoes carved into the beams of the hall should be, "This house shall be preserved and never will decay, where the Almighty God is honored and served day by day."

Friday, July 26.

CANONS ASHBY HOUSE.

One of the many charms of this delightful house is its proximity to the high road, which runs under its walls on two sides. It is not one of those stately homes of England which stand haughty and exclusive amid a great park, or arrogantly perched on some height domineer over the surrounding country. At Canons Ashby the lord of the manor evidently thought of the comfort of his family and the happiness of his servants rather than of the envy of his neighbours. The house is of medium size, and stands to-day in many respects as to its plan as it was three hundred and fifty years or more ago, when a Dryden built the greater part of it. It has, we believe, remained in possession of the family ever since. The Drydens (or Dreydens, as the name



[By permission of Messrs. B. T. Batsford.

CANONS ASHBY.—From Gotch and Talbot Brown's "Architecture of the Renaissance in England."

was then written) were a Cumberland family, with some property in the neighbourhood. To this fact is generally ascribed the existence of the short tower, 50 feet high—an altogether unusual feature in the Midlands, but one which might well have been erected as a reminiscence of the pele towers seen in Northumberland and other Northern counties. John Dryden, a son or grandson of the founder, added the great hall and other portions. To him is also credited the formation of the courtyard, which, if unpretentious and innocent of frowning battlements or cunning loop-holes, would yet securely shelter a body of horse or many a stately equipage. With two-storeyed buildings on all four sides, access to it from the road can only be gained through one entrance. It is here that thoughts of defence and offence can occur, for the court is small and somewhat gloomy. The general plan of the house follows, it will be seen, the time-honoured arrangement which had its origin in those simple days when the owner was content with a hall to live in and a kitchen to cook in, and which gradually developed until, as here, there was a suite of family rooms at one end of the hall and a

corresponding servants' wing at the other. The most important subsequent alterations to this mid-sixteenth century house were those carried out by Sir Edward Dryden in 1708-10, though about a century before a fine coved plaster ceiling and a fireplace were inserted in the drawing-room. Seventy or eighty years ago the place narrowly escaped "restoration"—the greatest danger, perhaps, to which it has ever been exposed. Each of the many rooms on the two storeys has something of interest, not the least being the kitchen, servants' hall, and brew-house. The principal rooms have fine panelling, tapestry, open fireplaces, chimney-pieces, and are filled with some delightful furniture. The exterior of the house is delightful in colour, form, and texture; around it are beautiful flower beds, velvet lawns, and great cedars.

John Dryden, the poet and political writer, was a great-grandson of the Dryden who came from Cumberland. Edmund Spenser was an honoured visitor here; later Samuel Richardson frequently stayed in the house, and is said to have written a large part of "Sir Charles Grandison" at Canons Ashby. To archaeologists, not the least eminent occupant is the late Sir Henry Dryden, the fourth baronet, who died some years ago after achieving a considerable reputation as an antiquary, and whom his friends love to think of as a modern Sir Roger de Coverley.

CANONS ASHBY CHURCH.

The Order of Austin Canons or Augustinians first settled in England at Colchester about 1105. An enormous number of their houses was founded in the reign of Henry II., and to this period belong the four in Northamptonshire. The church at Canons Ashby as it now stands is merely the western portion of the nave of the priory church, which, as a rule, had naves of considerable length to accommodate their great congregations, with long choirs. Adjoining the nave at the north-west corner is a large tower dating from the early fourteenth century. Along the whole west front is an interesting arcade of two periods. It is probable that the church had at first, as was usual with the Black Canons, no aisles. When the time came to rebuild the nave, an aisle was erected on the north side between 1240 and 1250. The existing church is mostly of a later date; the east wall was inserted by Sir John Cope about 1540, to whom the priory had been granted two years before; the south wall was re-erected on original foundations in 1710, when the present roofs were also put up. There are numerous monuments to members of the Dryden family, beginning with a brass to the John Dryden who died in 1584.

BYFIELD CHURCH.

If for no other reason, a visit to this church would be repaid by the splendid old bench-ends. The interior has a very dignified effect, which is enhanced by the greenish colour of the local Horton stone. The present building represents the various fashions of the second half of the fourteenth century. The tower and spire are the latest portions; the latter, with its curious octagonal turrets at the angles, was not completed until early in the fifteenth century. In the chancel are three beautiful two-light windows of great height and slenderness. There is also a very interesting example of a low-side window. The large south porch resembles the tower somewhat. In it is displayed a notice to the effect that "All females are particularly requested not to enter this church in pattens."

After an interval for lunch at Hinton, a journey of nearly an hour's duration brought the party to

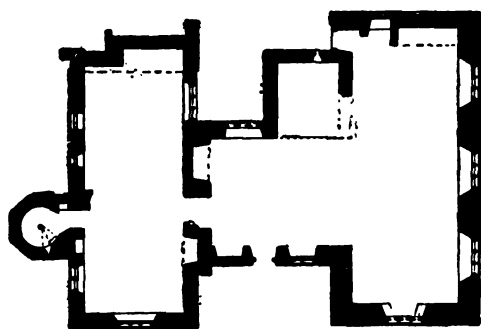
FAWSLEY DOWER HOUSE.

This is a mere shell, which was last occupied as a dower house in 1702, and has not been inhabited at all since the end of the eighteenth century. It was most likely built in the reign of Henry VIII. It faces south, and is for the most part of brick with vitrified diapers in the walling, stone being chiefly reserved for the windows and dressings throughout. As Messrs. Garner and Stratton say: "The details are very similar to those in the west wing at the manor house, and its excellent cut-brick chimneys show how widespread was the delight in making this prominent feature beautiful as well as useful." They are the only examples of elaborately cut-brick twisted chimney stacks in this stone county. The rooms must have been small and low. The accompanying plan shows the arrangement as far as it can now be made out from the existing outer walls. It seems a pity that something more efficacious than encircling it with barbed wire cannot be done to preserve this building from further decay.

FAWSLEY CHURCH.

Situated close to the great mansion and cut off from the world by a wide park, this small thirteenth century church

seems to be an appendage of Fawsley Manor House. Its interior bears out that impression from the prevalence of Knightley monuments. A lot of old woodwork has been used up in the present pews; in the windows is a large amount of heraldic and German medallion glass—the latter



SCALE OF FEET 0 10 20

[By permission of Messrs. B. T. Bateford.]

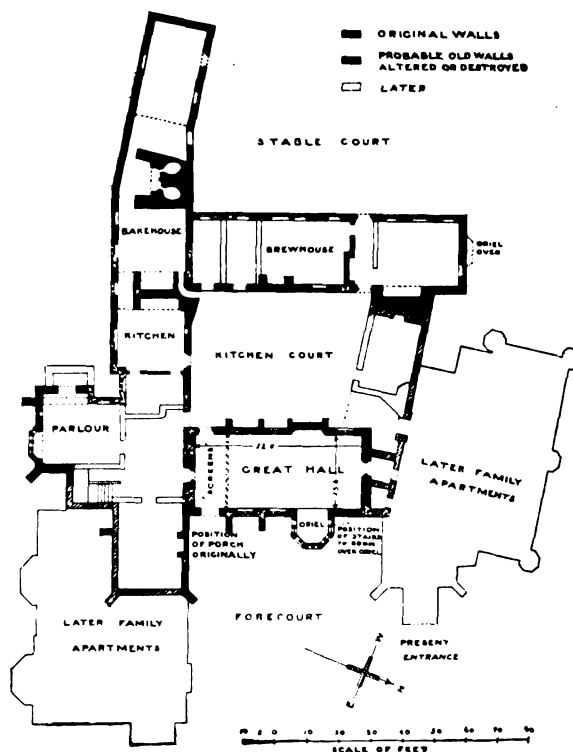
FAWSLEY DOWER HOUSE.—From Garner and Stratton's "Domestic Architecture of England during the Tudor Period."

dealing with sacred subjects. The church would be worth a visit if it sheltered no other monument than the table tomb of Richard Knightley (d. 1533) and his wife, Joan Skenardon. Its alabaster figures retain much of the original colouring and are therefore of exceptional interest. There are several small alabaster figures of children in the sides. Mr. St. John Hope, in speaking of it, said that if the monument were in France a cast would have been made of it by the Government and placed in the Trocadero Museum; whereas in England no one bothered about works of art which their forefathers produced. The monument was, he continued, worthy of the closest examination by reason of its extraordinary detail. As alabaster was soft when quarried and only hardened under exposure it was possible for the carver to obtain the greatest minuteness. There was, he added, a very similar tomb in St. George's Chapel, Windsor. Besides this masterpiece of English sculpture, there are brasses and many other family monuments in the church of various dates.

FAWSLEY MANOR HOUSE.

As will be seen from the accompanying plan, which was made by Sir Henry Dryden in 1857, there have been very considerable additions to this building. As they lack artistic merit they have the effect of making a disappointing first impression, which is only removed when the great hall is entered. The hall itself had its screens at the south end; the oriel window, instead of lighting the high table according to custom, was placed in the east wall and nearly opposite a very handsome fireplace. Messrs. Garner and Stratton, in the first volume of their work "Domestic Architecture of England during the Tudor Period," give a detailed account of this interesting stone-built house. There is in the district, as they point out, surprisingly little domestic work of the fifteenth century to suggest the wonderful inheritance from the church builders of the two preceding centuries. From their admirable account we take the following:—"Fawsley is built of a warm-coloured local brown stone with white stone dressings, and while it perpetuates all the irregularities of an early court-yard house it at the same time marks an advance of some significance. No thought of protection from attack seems to have influenced its plan, all the rooms look out fearlessly through wide and lofty windows into the stately park, and the great hall, instead of being sheltered from intrusion by being accessible only through a gatehouse and across a courtyard, as in most houses of its type, stands directly in the front with the principal entrance freely exposed to the outer world. This foreshadows an important development, and one that Elizabethan builders were not slow to appreciate. The earliest parts of the house as it now stands are in the kitchen wing. . . . The great hall seems to have been completed by Sir Edmund Knightley between the years 1537 and 1542. Though it has been altered in many ways, and the fine bog oak ceiling spoilt with paint and plaster, it is still a noble example of the hall of the sixteenth century, when it was ceasing to be the common dining-room of the household, but as yet had not taken its place in a symmetrically disposed plan." Fawsley is therefore interesting to the architect as marking a step towards the development of the present-day house plan. To the genealogist it should

be a paradise. Conspicuous and alone on the south wall of the great hall is the family achievement which bears no less than 334 quarterings. When the Richard Knightley bought Fawsley in 1415 he did not come, like so many others, as an ambitious *nouveau riche* eager to lay the foundations of a pedigree. The house of Knightley is one of the



[By permission of Messrs. B. T. Bateford.]

FAWSLEY HOUSE.—From Garner and Stratton's "Domestic Architecture of England during the Tudor Period."

very few in England which can prove an undoubted descent from an ancestor recorded in Domesday—Rainald, lord of Knightley, in Staffordshire, whose son William assumed the local name. The Knightleys had a remarkable aptitude for marrying heiresses, whose arms were duly impaled on the family escutcheon. Yet another kind of interest is attached to Fawsley House. Above the oriel window is a small chamber where the "Epitome" (the second of the Martin Marprelate pamphlets in support of the Puritans) is believed to have been printed. Sir Richard Knightley, when examined by the Star Chamber, admitted that the tract was printed at his house.

Lady Knightley of Fawsley received the members, and, after conducting them over the house, entertained the party to tea in the great hall.

Saturday, July 27.

The fifth day of the Summer Meeting was noteworthy by reason of the fact that all the visits were exclusively to churches or their attendant buildings. The first place was Stanwick.

STANWICK CHURCH.

In a county containing as many imposing churches as Northamptonshire, this church might not attract the passer-by if it were not for the thirteenth-century tower and spire at the west end. Again, these might, in a county of good spires, win little more than a glance if it were not for their outline on plan. They are octagonal from the level of the nave roof. The long slender spire is more decorative in character, and apparently somewhat later in date than the tower. The belfry stage has an arcade of round-headed arches, of which those facing the cardinal points are pierced with coupled lancets, and the other four faces have only the heads. There is a chamber over the south porch. The interior of the church shows the customary variety of periods. The pulpit was the gift of John Dolben, Bishop of Rochester, whose father had been rector at Stanwick from 1623 to 1631.

RAUNDS CHURCH.

This church is considered one of the most striking and important in the county. Its chief feature is the tower and spire, rising to a height of 150 feet, at the west end, which gains additional prominence from the fact of its being approached up sloping ground. Raunds is generally considered

to have the finest steeple in England of its period—the first half of the thirteenth century. The interior presents a great many problems for elucidation. Mr. Hamilton Thompson, in explaining the building, said it was, at any rate, clear that in the first instance there was an aisleless church. Between 1200-50 a great deal of work was carried out—possibly the tower was built somewhat westward of the Norman nave. The chancel is particularly puzzling. The frescoes, or rather the scanty remains of them, are interesting; they were discovered in 1876 under the whitewash during the restoration of the church by Sir Gilbert Scott. The one considered the most remarkable is that on the north wall illustrating the legend. "The three kings living and the three kings dead." Another shows St. Christopher, a third is a symbolic representation of the Seven Deadly Sins. There was also a series of pictures illustrating the history of St. Catherine.

HIGHAM FERRERS.

There is here a fine group of buildings within the churchyard wall, comprising a grammar school founded by Archbishop Chicheley in 1422, a Bede House or hospital, also founded by him, and a noble church, which was likewise much indebted to this prelate, who proved finely "the affection he retained for the place of his birth." Finally, we may mention the ruined cross and the vicarage. A threshold worthy of the finest parish church in the land is that under the tower. Its large exterior enclosing arch forming a shallow porch is a fairly frequent feature in the locality, as at Oundle, Rushden, and Raunds. It shelters a pair of doorways with low segmental heads, and in the tympanum above are ten circular carved panels dealing with the life of Christ. On entering through this west door the visitor cannot fail to be struck by the length and breadth of the church. It may be said to have two naves and two aisles. No positive explanation is forthcoming as to why two naves of practically equal length and breadth came to be erected. On plan the body of the church is square, while the two chancels make a smaller square. The church is mainly of the late thirteenth and early fourteenth centuries. The south or ritual chancel and choir contain excellent stall and screen work, which were given by Chicheley. Between the chancels is an elaborate early fourteenth-century canopied table tomb, with considerable remains of colour and interesting heraldry. There is another screen between the north chancel and nave; in this chancel is a brass of Chicheley's father, and its eastern portion is screened off, as at Rushden, by a partition wall to serve as a vestry.

The advowson of the church belonged to the family of Ferrers, Earls of Derby, whose castle stood on the north side of the church until the attainder of Robert Ferrers in 1266. It was then granted with the manor to Edmund, Earl of Lancaster, second son of Henry III. His second son granted the church to the new College of the Annunciation of Our Lady in the Newarke, at Leicester, to whom it was appropriated in 1357-58. The vicarage remained in the gift of Newarke College until the suppression of that foundation under the Chantry Act of 1547. In 1422 Archbishop Chicheley obtained licence to found in the church a college of eight chaplains, one of them to be master, another to be grammar-master, and a third song-master, four clerks, and six choristers. Its chief endowment consisted of the possessions of the suppressed alien priory of Mersea in Essex. It was surrendered to Henry VIII. in July 1542, before the passing of the first Chantry Act. The common house of the college was some distance north-west of the church; considerable remains of its gateway exist on the west side of the main street of the town. The school and almshouse, or hospital, which remain in the churchyard are in arrangement exactly parallel to that at Ewelme, in Oxfordshire.

After an interval for lunch at Hinton, a journey of nearly an hour's duration brought the party to

RUSHDEN CHURCH.

The ground plan of this church is curious, and it almost appears as if the thirteenth century builders might have had to deal with a short but broad site. Unlike most of the churches in the locality, there are here both aisles and transepts. The north and south chapels of the chancel are a late fifteenth century rebuilding and enlargement of earlier chapels; their side walls range parallel with those of the nave. The transepts are short and wide. The width of the aisles may have rendered necessary in the fifteenth century the introduction of the present elaborately pierced strainer arch between the nave and the crossing of the transeptal chapels. There is an arch of precisely similar

character at Finedon church, and also a second in the same county. Across the entrance to the south chapel or chancel aisle is a beautiful Perpendicular arch with vigorously carved angels supporting its exterior square label. An inscription on the soffit records its construction by "hue bochar and Julian his wyf." Other points noticed were the fifteenth century screen work across the entrances to the three chancels and the transepts; the roof; a stone reredos; the imposing east window; the pulpit, and the font. The tower and spire are of unusual beauty; it has a shallow recessed porch in front of the west door; indeed, this fifteenth century addition is generally considered to be the finest and most elegant of all Northamptonshire towers and spires.

Mr. Hope drew attention to the remains of ancient glazing in the windows, including an unusual treatment of the Tree of Jesse. Mr. Aymer Vallance pointed out that the tracery in the church was typical of this part of the country, where windows of late fifteenth century date were not of pure Perpendicular design as the ogee formed the basis of the ornament.

The rector claimed with pardonable and praiseworthy pride that the Institute would not come across a church more beautiful in its architectural detail than their famous one of Rushden. In the locality they called it the Queen of Northamptonshire churches—the king being that at Higham Ferrers.

In the evening a paper was read at the Grand Hotel by Sir W. Ryland D. Adkins, K.C., M.P., on "The Story of Northamptonshire."

Monday, July 29.

The second half of the summer meeting opened with a railway journey to Thrapston, and then a ride in vehicles to

LOWICK CHURCH.

This church is most remarkable for its monuments. The nave and aisles were probably erected by Sir Henry Greene, who obtained possession of the manor and the advowson in 1369. Sir Henry was a favourite of Richard II., and was executed at Bristol in 1399. He was succeeded in his estates and in his church rebuilding by his son Ralph Greene, whose splendid monument is in the chancel. The most remarkable structural feature of the church is the series of windows in the north aisle. They are of four lights divided by a battlemented transom. The upper divisions are filled with fourteenth century stained glass taken from a Jesse Tree. The beautiful western tower has a large octagonal lantern, after the fashion of some other churches in the neighbourhood. There are a series of tombs of the lords of Drayton, including the alabaster monuments of Ralph Greene and of Edward Stafford, Earl of Wiltshire, and a marble tomb, with brasses, of Henry Greene.

Mr. W. H. St. John Hope, in describing the monuments, said that the special interest of the alabaster tomb of Ralph Greene and his wife lies in the fact that it is one of the two whose history is accurately known. The text of the contract in French for the making of the entire monument has been preserved. It is dated February 14, Henry V. (1418-19), between Katharine, who was the wife of Ralph Greene, esquire, William Aldwyncle and William Marshall, clerks, on the one part, and Thomas Prentys and Robert Sutton, of Chellaston, in the county of Derby, "kervers," on the other part, "witnessing that the said carvers have covenanted and agreed to make and carve well, honestly and profitably, a tomb of stone called alabaster, good, fine and pure, containing in length 9 feet and in breadth 4 feet 2 (inches), upon which tomb shall be made two images of alabaster, the one a counterfeit of an esquire armed at all points, containing in length 7 feet, with a helm under his head and a bear at his feet; and the other image shall be the counterfeit of a lady lying in her open surcoat with two angels holding a pillow under her head, and two little dogs at her feet, the one of the said images holding the other by the hand, with two tabernacles called gablettes at their heads, which tomb shall contain at the sides the ledgerment three feet, on which sides shall be images of angels with tabernacles bearing shields according to the device of the said Katharine, William, and William. And also the said carvers shall make an arch of alabaster above all the said tomb in length and breadth, with pendants and knots and a crest of faytes and other works pertaining to such a tomb, the which images, tomb, and arch shall be proportioned, gilded, painted, and arrayed with colours well and sufficiently in the pure, honest, and profitable manner that pertains to such work. For doing and performing which works in manner aforesaid the said Katharine, William and William shall pay or cause to be paid to the said

Thomas and Robert, or either of them £40 sterling." The conclusion Mr. St. John Hope arrived at was that from their similarity all these series of knightly effigies in orles (or roll of rich embroidery worn round the bascinet), dating from the close of the fourteenth and the beginning of the fifteenth century, were the work of the Chellaston. There are also other groups of alabaster tombs that clearly emanated from a common centre, probably Chellaston.

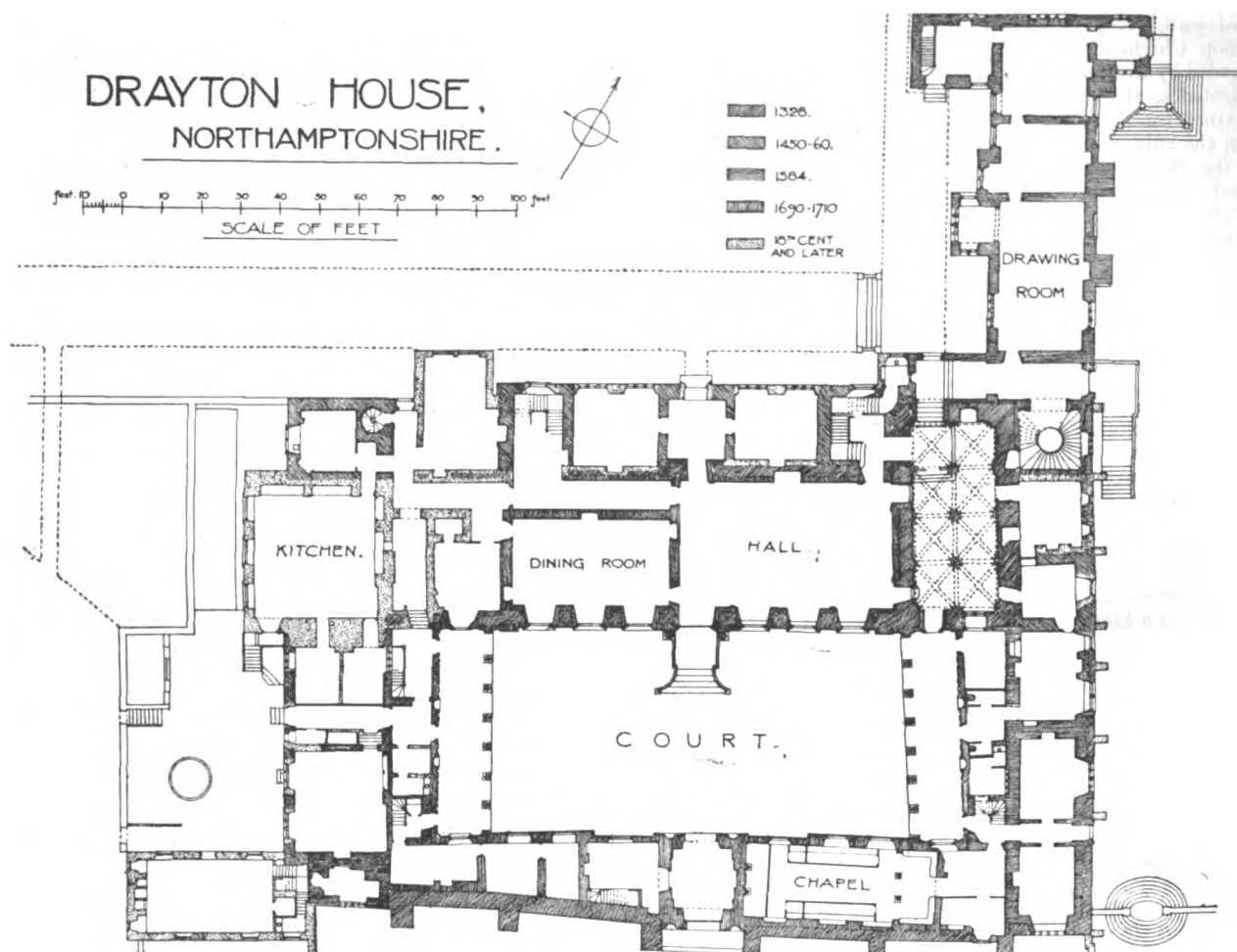
In speaking of alabaster monuments generally, Mr. Hope gave an interesting account of a French purchase of English alabaster in 1414. Two documents were brought to light in France a few years ago, and brought to the notice of English archaeologists by Mr. John Bilson, which chronicled a voyage to England undertaken by Alexandre de Berneval, mason, for that purpose. This Alexandre was one of the most prominent architect-masons of Rouen in the first half of the fifteenth century. In 1414 he was commissioned by the abbot of Fecamp to go to England to purchase the necessary alabaster for certain work. The architect and three com-

Alexandre and his companions should buy; while he was to be paid for the freight at an agreed rate.

After inspecting the church a move was made to

DRAYTON HOUSE.

The early manor house probably consisted of a hall, with cellar and great chamber above at one end, and kitchen offices at the other, and was apparently entered through a porch on the north side, opposite the present entrance. The cellar, built about 1270, and vaulted in two alleys from a central row of columns, still remains with very slight alterations; the hall has been much transformed, but portions of the old walls are left, and the mediæval roof is preserved above the present ceiling. In 1328 Simon de Drayton had licence to crenellate the house; the outer wall of the present entrance courtyard may be referred to this date. The porch of the hall was rebuilt by Henry Greene before his death in 1467-68. In 1584 the second Lord Mordaunt of Turvey added the north-east wing, with the long gallery on the



J. A. GORCH, F.S.A., mens. et delt.

panions sailed to Newcastle, where they stayed eight days at the expense of the English ship-master. They left Newcastle on St. Christopher's Day (July 25), and arrived the fourth day after at Nottingham. "And then the said Englishman (i.e. the ship-master) took them to a village called Chellaston, where the alabaster was, and found there the merchant who sold it, called Master Thomas Prentis, with whom the said Englishman made a bargain to deliver to him certain pieces of alabaster at a certain price, by an agreement between them two in the presence of the afore-said persons, by whom the said Prentis should receive immediately forty golden crowns, undertaking to deliver the said stone at the port of Hull in England. And the terms were made in the town of Nottingham in England between these English merchants. And afterwards, forthwith and immediately, the said English merchant took the said Master Alexandre and those in his company to the port of Vicerney (Winchelsea?) in England, and caused them to cross over thence to Dieppe. And everything was done at the expense of the said Walter, the Englishman, from the time that they left Harfleur to their return to Dieppe, together with four horses bought by the said Englishman." It should be mentioned that before they set out on their six weeks' journey the abbot and convent advanced the ship-master two hundred golden crowns to be expended in such merchandise as

third floor, and a Gothic-vaulted cellar in the basement. The towers at either end of the north front were perhaps built at the same time, and two-storeyed buildings were erected against the north wall of the house on either side of the porch. The wooden dormer windows of these buildings and the stone cupolas of the towers appear to be additions of the middle of the seventeenth century. In the latter part of that century Henry Mordaunt, second Earl of Peterborough, laid out the gardens, building the small banqueting-houses in the east garden, and decorating its walks and parapets with much handsome leadwork. He probably shifted the main entrance to the south side of the house; the outer gateway of the entrance courtyard is certainly his work. After the marriage of his daughter, the Duchess of Norfolk, with Sir John Germain, in 1701, the south front of the house was transformed by the erection of the stately entrance façade, the general features and details of which are very unlike any contemporary English work. The architect's name is unknown. At the same time the great chamber was remodelled, sash windows were freely introduced, and three staircases were made, one of which, at the south end of the Elizabethan wing, is a fine example of a spiral staircase of geometrical construction. The grand staircase at the north-east end of the hall has painted walls and ceiling, and an iron rail which, with most of the iron-

work of the house and garden, may have been designed by Tijou. A new stair was made from the Elizabethan wing to the east garden, and the approaches to the house were provided with iron gates of great beauty. Sir John Germain's second wife, before her death in 1769, added the east and west colonnades of the courtyard, and built a chapel against its south wall. The last important work in the latter part of the eighteenth century was the redecoration of the dining-room (on the probable site of the early kitchen) and drawing-room. The delicate coloured plaster-work of the dining-room is in the manner of the Adam Brothers, but the name of the artist has not been kept on record. Much discriminating restoration has been done in recent years. The whole house is a splendid monument of English domestic architecture, and contains a vast amount of furniture, china, &c., which has its own special interest. There is a fine plaster ceiling in the great chamber or king's chamber, and the Oriental decoration of the Duchess of Norfolk's boudoir, which adjoins the long gallery, is also noteworthy.

Drayton and Woodford are a good many miles apart, so a halt was made en route for lunch at Thrapston.

WOODFORD CHURCH.

Woodford Church is as long and narrow as Rushden is short and broad. There are many curious constructional features about it. The nave and north aisle are strengthened by cross arches at the fourth bay from the tower; across the south aisle there are three transverse arches; there is a curious extension eastwards of the very beautiful south porch, which is sometimes explained as being part of a transeptal chapel. Just westward of the present chancel is an arched monument with a wooden effigy of a member of the Trailly family (c. 1300), who were sometimes lords of the manor and patrons of the church. A small recess cut into one of the nave pillars contains something wrapped in cloth, which is believed to be a heart—probably that of some Trailly who died in the Holy Land.

The last visit on Monday's programme was to

LETHLINGBOROUGH CHURCH.

By far the most notable feature here is the west tower, which is a campanile connected with the church by a double porch. It forms the sole remainder above ground of the ecclesiastical college founded in the reign of Edward III. by John Pyel, Lord Mayor of London, and completed by his widow. The high tower, with its octagonal lantern of three stages, was apparently utilised for domestic apartments. It was entirely taken down twenty years ago, and rebuilt on identically the same lines with the old materials. In the south chapel is the tomb with effigies of John Pyel and Joan, his wife. Near by is a later and much more elaborate canopied tomb in Purbeck marble. This, as Mr. Hope pointed out, is one of a large class to be found all over the country, which seem to have originated from one particular town or shop—probably London—and were all of practically identical design, the only individuality being in the inserted brass at the back. The collegiate stalls remain in the chancel.

(To be concluded.)

SOME WORKS OF THE LATE MR. J. M. WHISTLER.

Is architecture "gefrorene Musik," as Schelling (and others) have said? Is pictorial art melting music, according to Mr. Whistler? Who can say, with any expectation of remaining uncontradicted? It depends, as we venture to think, so much upon the architecture, the art, and the music.

But this may be safely predicated in any case—namely, that it needs no fanciful titles in order to establish either artistic or musical conception in compositions, these being qualitative, irrespective of any such adventitious provisions. For our own part, we are repelled by such attempts to force the opinions of the public. If a picture, as is often the case, needs a discriminating title, as, for example, "The Bath of Psyche" or "A Visit to Esculapius," then it should, of course, be supplied. But had Lord Leighton called his fine work "Girl Hesitating at the Edge of the Bathing Pond," or had Poynter called his work "95° in the Shade—Clothes at a Discount," it would have been quite jejune.

And having thus prepared the way, let us now pay some detailed regard to the small but interesting loan collection of Mr. Whistler's art on view at the Tate Gallery. The gems are three of the oil-colour exhibits, "The River at Westminster," "Battersea Bridge" (No. 14), and "Cremorne Lights" (No. 19)—we will omit the fanciful portion of the

titles. These three are poems in colour and treatment; the first shows a dull dark-greyish-blue pall, with a suggestion of pervading half-light, and is fascinating. But equally pleasing in another vein is the "Battersea Bridge," for here is no haziness, no pall, no mystery, no crépuscule or nocturne in title or in suggestion; it is Battersea, a piece of London, as Londoners know it, with the proper local touch and pretty colouring, and with sufficient human interest in it to remove it from the ranks of the merely topographical sketch, and it is in every sense good and pictorial. The third gem needed no adventitious entitling; it could stand entirely on its own undoubted merits.

When Mr. Whistler's name reverts to mind, people almost inevitably think of one of his finest works, the portrait of his mother; this is not in the collection now on show, though reference is made to it in regard to another portrait exhibited, that of Miss Alexander (No. 20)—but what a difference! For here the pose is poor, the flesh-tints are dirty, the face is out of drawing. "Calle, Venice," is a pastel study on brown paper, slight in nature, but forming a pretty little colour sketch, and providing nice atmospheric effect.

Being so addicted to fanciful titles, why did not Mr. Whistler call his water-colour study (No. 6) "A Vertigo in Canary-yellow and Black"? "The Salute, Venice," is an atmospheric pastel study of the well-known Venetian church, but is scratchy. "Blue and Violet" might have been suitably entitled "A Diaphony in Blue and Flesh-tints," for it consists of a gracefully-posed draped girl (if such diaphanous material can be called drapery).

The artist had certainly a good command of figure-drawing, as the last-named and other pictures make manifest; we may also mention his pastel studies "May" and "La Jeunesse." "Chelsea" (No. 21) is good, but is not on a level of excellence with "Cremorne Lights," and this, too, may be said of "The Thames" (No. 23), though the last-named is not only good, but is also poetical. In "The Two Little White Girls" we note the first satisfactory flesh tinting, and the picture composes well.

"The Fire Wheel" is very clever, vigorous and poetical; this is one of Whistler's many nocturnes, and certainly merits the title. "The Conversation" supplies graceful posing for the two ladies, and is a prettily touched-in pastel sketch. The last of all catalogued, "The Beach" (38), is full of light and atmosphere; but when that is said it is but a very slight sketch.

The exhibition is, however, one that should and will be visited, as it undoubtedly appeals to various tastes, and is the work of a man who was thoroughly in earnest and one who was able to translate his thoughts into colour to an extent to which very many artists might aspire, but would aspire in vain.

QUEBEC BRIDGE.

In the last annual report (1910-11) by the Department of Railways and Canals of the Dominion of Canada an interesting account is given of the rebuilding of the Quebec Bridge after the disaster of five years ago.

On August 29, 1907, the cantilever bridge in course of construction by the Quebec Bridge and Railway Company (originally commenced under a subsidy of 1,000,000 dollars) suddenly collapsed.

Under the terms of an agreement with the company, dated 1903, the Government had undertaken to guarantee the principal and interest of the bonds or other securities of the company to the limit of \$6,678,200, the company releasing claim to the balance remaining unpaid of the said subsidy, such guarantee to be secured by mortgage on the company's franchises, tolls, and property. On February 1, 1904, a mortgage trust deed was executed, conveying to the Royal Trust Company (Montreal), as trustees, all the property and franchises of the company, and providing for the issue of bonds accordingly.

It was provided in this agreement that the Government should have the right at any time, on one month's notice, to take over the company's undertaking, assets, property, and franchises on paying the shareholders the amount of their stock at par, not exceeding \$265,585.70, with simple interest at 5 per cent. and a premium of 10 per cent. on the par value of the paid-up shares.

Of the said subsidy of \$1,000,000 there had been paid to the company a total of \$374,353.33 prior to the execution of the above agreement; and, subsequent to its execution, payments were made from the proceeds of their bonds to the extent of \$5,016,453.66 on certificates of the Government engineer covering work done and materials delivered.

After the collapse of the bridge, the right of the Government to take over the company's undertaking was exercised under the authority of an order in Council. The date of assumption was December 1, 1908. The total of the amounts paid by the Government to the several shareholders for their shares was \$355,279.07. The deed of assignment and transfer from the company to the Government was dated October 13, 1909.

Under authority of an order in Council of August 1908, a Board of three engineers was constituted for preparation of a new design and specifications, and for the reconstruction of the bridge, with powers to call in expert engineers as advisors on points of difference that might arise.

Towards the close of the year 1909 such progress had been made that newspaper notice was given in November of that year inviting contractors to visit the office of the Board in order to obtain information to enable them to prepare offers for the superstructure on the Board's plans and specifications, intending contractors being, however, invited to submit alternative designs.

In June 1910 the formal call for tenders was made by newspaper advertisement. In response, thirty-five different propositions were submitted, which were duly considered by the Board, who finally, after calling in advisory engineers, recommended the acceptance of an alternative design sent in by the St. Lawrence Bridge Company (with whom are associated the Dominion Bridge Company and the Canadian Bridge Company). This design the Board considered to possess certain features of strength, simplification of erection, economical distribution of material, and general appearance which, in their opinion, would produce a bridge that "would compare most favourably with the highest type of long span bridges in existence." By an order in Council of March 31, 1911, a contract was entered into with the conjoined companies named. The contract price is 9.02 cents a ton, and will aggregate about \$8,650,000, a saving of about \$2,600,000 having been effected by the elimination of the highways for vehicular traffic contemplated in the original design. The contract date for completion is December 31, 1915.

The bridge when constructed will have a total length of 3,228 feet, or about three-fifths of a mile. The centre span will be 1,800 feet long; the length of the suspended portion of it will be 640 feet. This span will for a length of 760 feet over the channel of the river have a height of 150 feet between its lower members and the high-water level of the river. The two cantilever arms will each be 580 feet long. The width of the bridge between trusses will be 88 feet. The bridge will comprise a double-track railway and two sidewalks for foot passengers.

Under date of January 10, 1910, a contract for the substructure was entered into with Messrs. M. P. & J. T. Davis, whose tender was the lowest of three obtained after newspaper advertisement calling for tenders, and two supplementary agreements (necessitated by changes in the caisson design and in the location of the north anchor pier) were made with them.

The Board of Engineers for reconstruction, as originally constituted, has been modified by retirements, and is at present composed as follows: Charles N. Monsarrat, M. Can. Soc. C.E., chairman and chief engineer; Ralph Modjeski, Am. Soc. C.E.; and C. C. Schneider, Can. Soc. C.E., and past-president Am. Soc. C.E.

The headquarters of the Board are in Montreal.

The expenditure for the past fiscal year up to March 31, 1911, was \$227,563.40, adding to which the expenditure for the year 1908-9, \$422,867.12 (in which is included the amount, \$355,279.07, paid for acquiring the stock of the Quebec Bridge and Railway Company, and \$31,765.44, the expenses of the commission of inquiry into the causes of the collapse of the old structure), and also adding the expenditure for the year 1909-10, \$111,782.02, for the preparation of plans, &c., the total Government expenditure amounts to \$762,218.54, against which there is to be credited the sum of \$100,000 paid to the Government by the Phoenix Bridge Company, the contractors for the original superstructure, in the final adjustment of claims arising out of the collapse, leaving the net cost to the Government up to March 31, 1911, \$662,218.54. This is irrespective of the amount of subsidy, \$374,353.33, paid to the Quebec Bridge Company, as above mentioned.

The report of the Board of Engineers of work on the reconstruction of the bridge for the year ending March 31, 1911, is as follows:—

Masonry.—Very little material progress was made in the actual construction of the masonry during the past year.

The caisson for the north main pier was built and floated into position, and actual work of sinking was started. Owing to an accident to the north main pier caisson after sinking operations had started, the concrete already deposited had to be removed, and the caisson placed in dry dock for repairs. Owing to the difficulty of sinking a caisson of such large dimensions it was decided by the Board to use this caisson for the south main pier, where the river bed was composed of material much easier to penetrate, and to construct the caisson for the north main pier in two sections. As soon as the weather permits in the spring and the necessary repairs have been made, it is the intention to have the caisson floated out of dry dock and placed in position on a prepared bottom. This caisson will probably be left in this position until next spring, the whole efforts of the contractor being directed towards the sinking of the north main pier. The existing north main pier was demolished. The facing stone of this pier will be re-used in the new pier.

Superstructure.—Tenders were called for the construction of the superstructure on July 1, 1910, and were opened on October 1, 1910. Contractors were allowed to submit plans of their own and prices thereon in addition to tendering on the Board's plans. Four firms tendered—namely, St. Lawrence Bridge Company, Pennsylvania Steel Company, British Empire Bridge Company, and Maschinenfabrik Augsburg-Nürnberg A. G. It was finally decided to recommend the acceptance of a tender submitted by the St. Lawrence Bridge Company, on a design of their own.

Removal of Debris.—During the past year the contractor has removed practically all the debris between the main pier and the anchor pier. All steel around the main pier that might interfere with the sinking of the caisson was also removed.

Removal of Approach Spans.—A contract was awarded the Phoenix Bridge Company for the removal of the approach spans and falsework on both the north and south shores. When the work ceased at the beginning of the winter the approach spans and falsework on the north shore had been removed, and a start made on the south shore.

Tests.—A series of tests were made during the past year for the Board by the Phoenix Bridge Company. This series consisted of sixteen tests of model compression members and fifty tension tests of eyebars. These tests furnished the Board with important information in regard to the physical properties of actual bridge members, such as were proposed for the new bridge. A short discussion is given in a report dated August 1, 1910, forwarded to the Department.

A further series of tests are proposed by the Board on other types of members to be used in the finally approved design of the bridge.

ILLUSTRATIONS.

BRANCH LIBRARY, MONKWEARMOUTH.

This building is the gift of Mr. Andrew Carnegie to the Sunderland Corporation, and was designed and carried out under the supervision of Mr. Edward Cratney, architect, Wallsend-on-Tyne, whose designs were placed first in an open competition. The building has been planned with a view to working the library with as small a staff as possible. The principal rooms are grouped round the entrance hall, which gives access to all parts. The delivery counter is so placed that the librarian has direct supervision of all the main rooms.

The library is arranged on the "safeguarded" open-access system. The walls are built of Withnell bricks, with Springwell stone dressings, and the roofs are covered with green Westmoreland slates. The floors of the main rooms are laid with maple wood blocks. The whole of the woodwork in the main rooms and the interior fittings are of oak.

The contractor was Mr. Joseph Huntley, of Sunderland. The carving was executed by Mr. Christian Neuper, Newcastle. The delivery desk was furnished by Messrs. Robson & Sons, Newcastle. The whole of the fittings and furnishings were carried out by Messrs. Laidler Robson, Ltd., Sunderland, to the designs of the architect. The heating system, hardware and entrance gates were carried out by Messrs. Emley & Sons, Newcastle. Mr. T. Cooke, Sunderland, was clerk of works.

MR. ARCHIBALD C. DICKIE, A.R.I.B.A., has been selected by the Education Committee for recommendation to the Chair of Architecture at Manchester University. Mr. Dickie has been one of the Instructors at the Architectural Association for some years, and we feel confident will fill the Professorial Chair with success.

9, 1912.

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The Architect, Aug. 9th 1912.



PHOTOGRAPHED BY BEDFORD LEMERE & CO. 147, STRAND, W.C.

"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

CHURCH STREET BRANCH LIBRARY, MONKWEARMOUTH, SUNDERLAND: DETAIL OF ENTRANCE.

Mr. EDWARD CRATNEY, Architect.



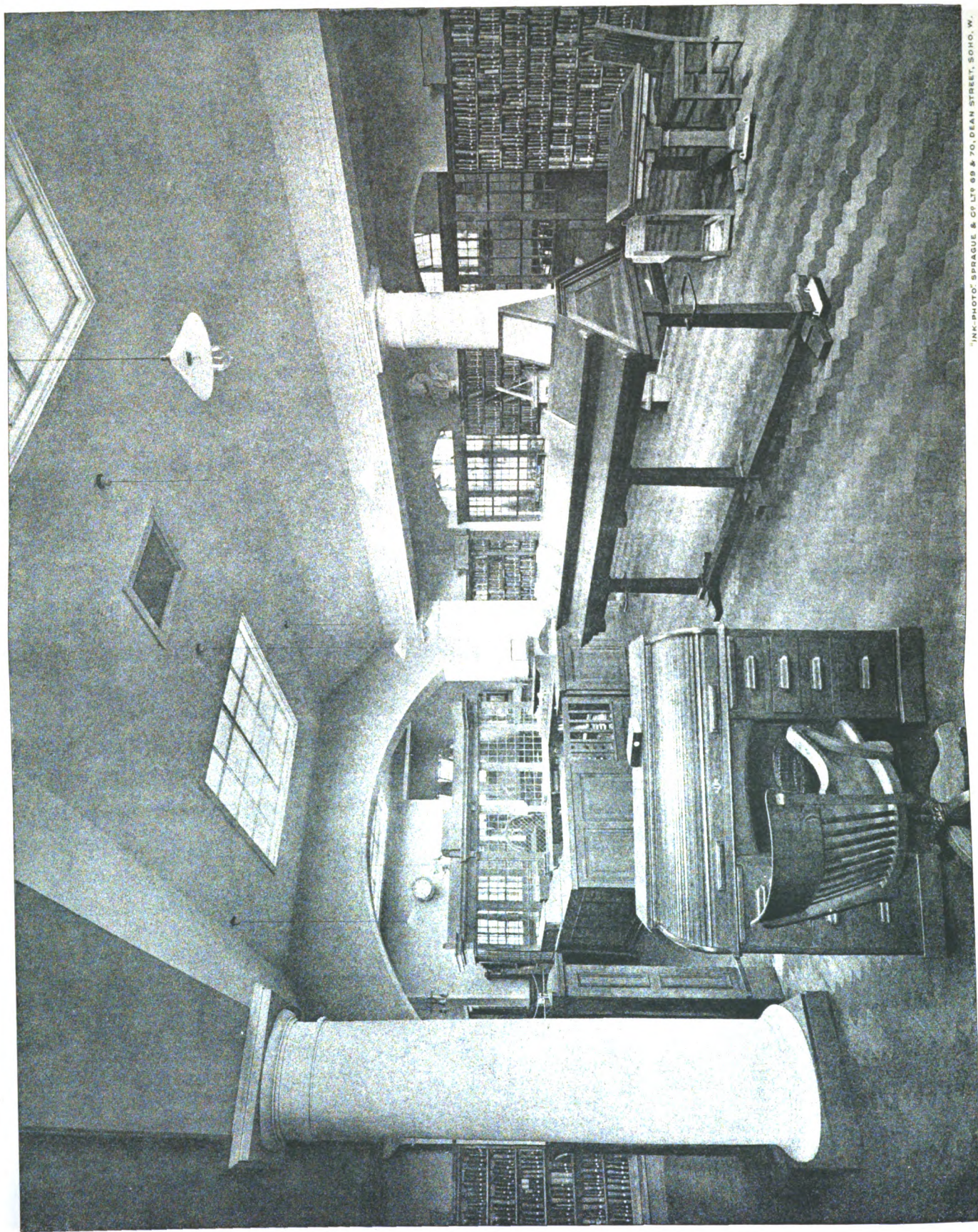


PHOTO BY T. LEWIS, 200, STRATFORD ROAD, BIRMINGHAM.

CHURCH STREET BRANCH' LIBRARY, MONKWEARMOUTH, SUNDERLAND: THE LENDING LIBRARY.

MR. EDWARD CRATNEY, Architect.

'INK-PHOTO' SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

LIBRARY OF THE UNIVERSITY OF CALIFORNIA



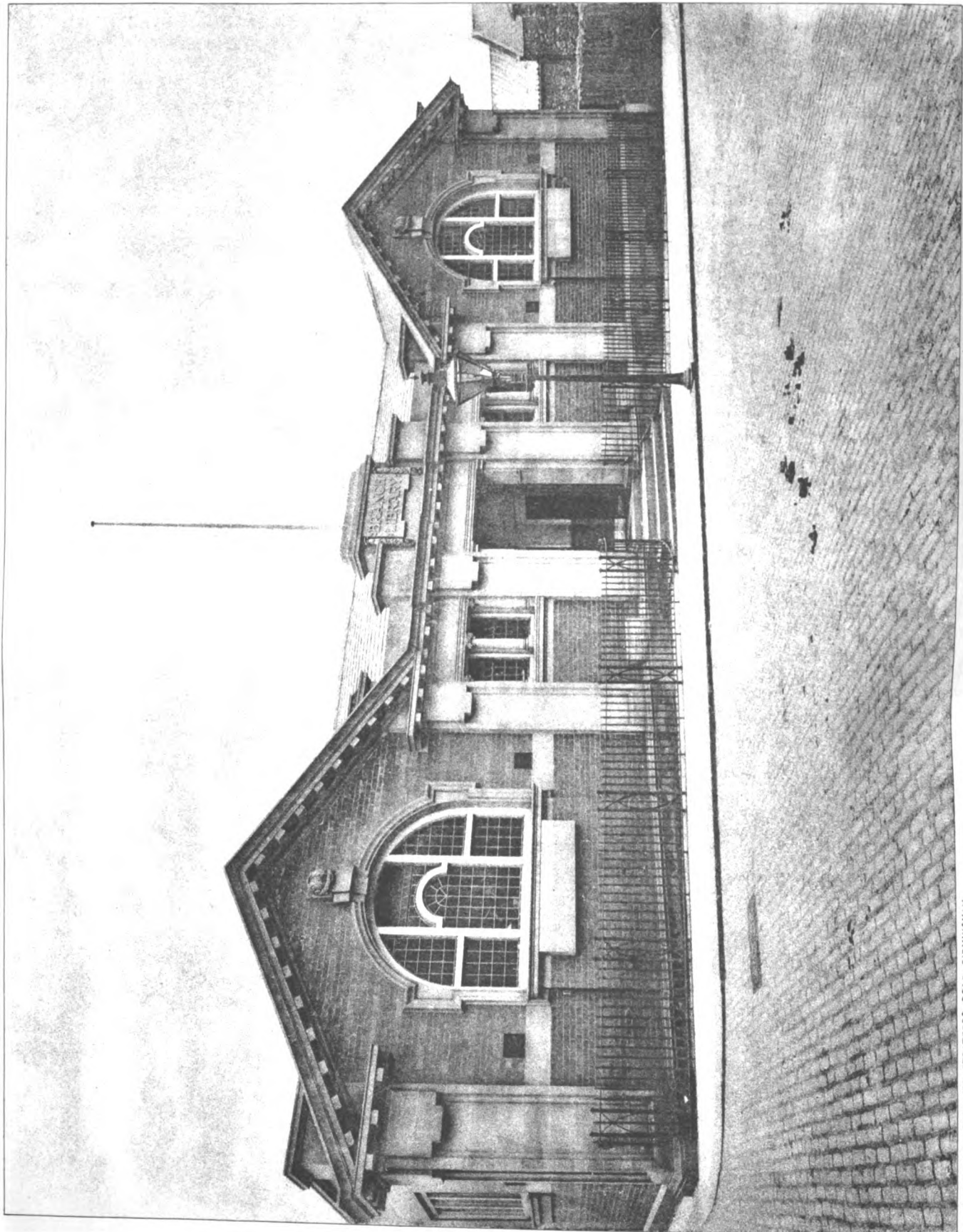


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CHURCH STREET BRANCH LIBRARY, MONKWEARMOUTH, SUNDERLAND : CHURCH STREET FRONTAGE.
MR. EDWARD CRATNEY, Architect.

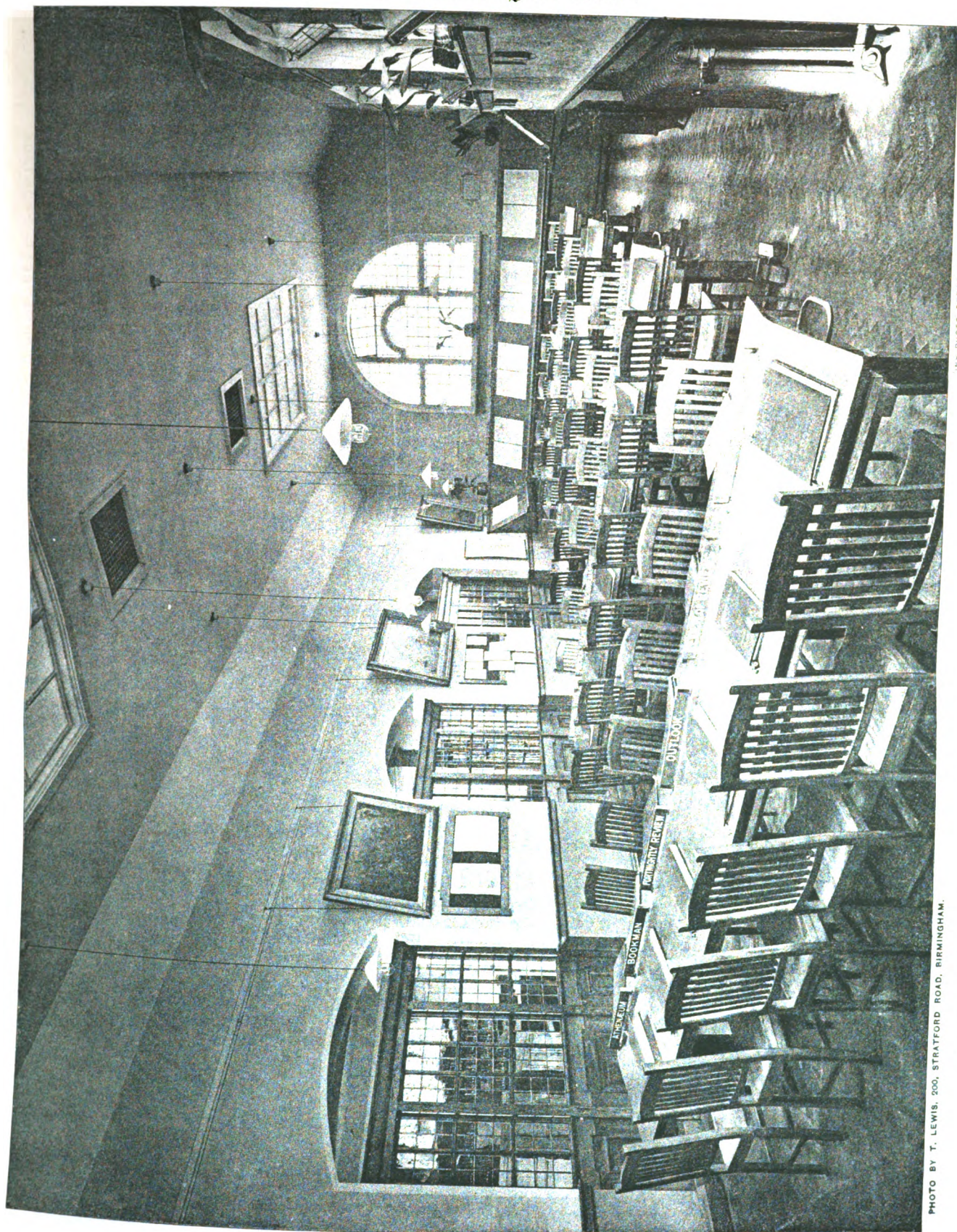


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CHURCH STREET BRANCH LIBRARY, MONKWEARMOUTH, SUNDERLAND: THE READING ROOM.
MR. EDWARD CRATNEY, Architect.



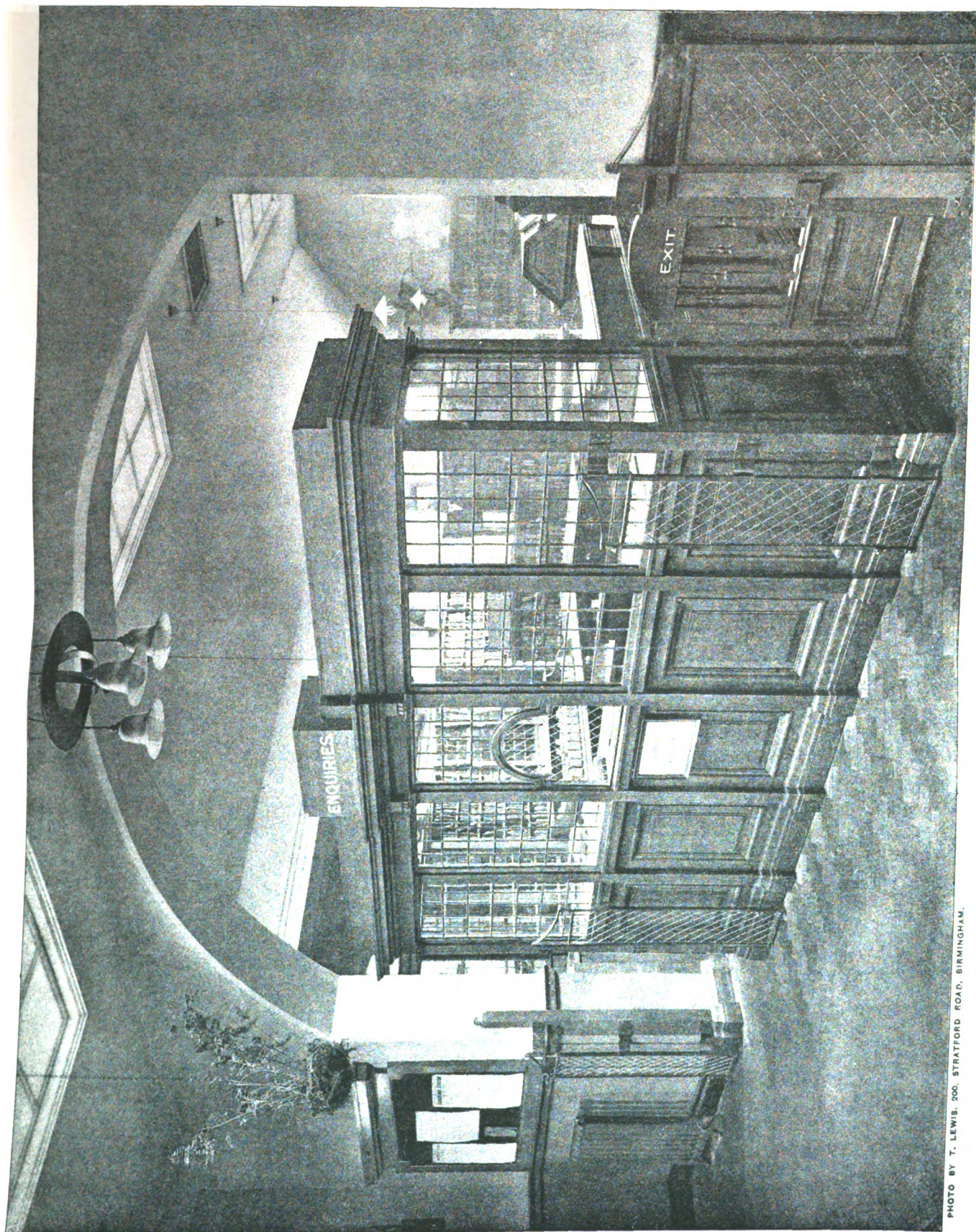
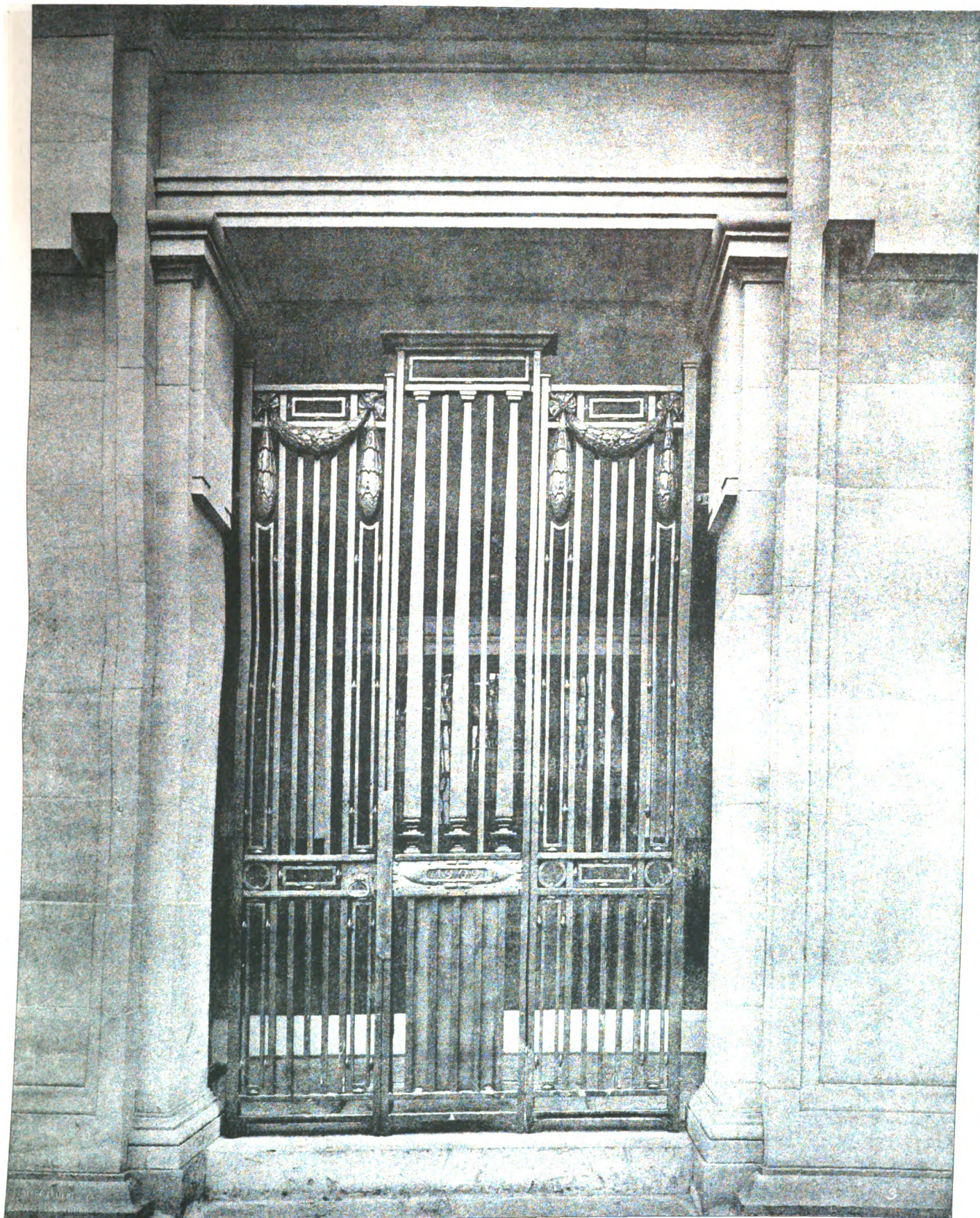


PHOTO BY T. LEWIS. 200, STRATFORD ROAD, BIRMINGHAM.

CHURCH STREET BRANCH LIBRARY, MONKWEARMOUTH, SUNDERLAND: THE ATTENDANT'S DESK.
Mr. EDWARD CRATNEY, Architect.





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INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

CHURCH STREET BRANCH LIBRARY, MONKWEARMOUTH, SUNDERLAND: ENTRANCE GATES.

Mr. EDWARD CRATNEY, Architect.



INTERIOR DECORATION.—III.
GREAT BRITAIN.—I.—TRANSITIONAL PERIOD.—
RENAISSANCE.

By ALBERT E. BULLOCK, A.R.I.B.A.

(Continued from page 42.)

THE three concluding articles of this series will each cover a period of about a century, commencing with the year 1520 or thereabouts, when Wolsey was engaged at Hampton Court Palace in beautifying his closef and other parts of this early renaissance structure, and incidentally building a residence for his own occupation, to 1619, the date of the erection of the Banqueting House, Whitehall. The second takes in the work executed in the principal reigns of the Stuart line, covering that of Inigo Jones, Wren, and others; while the third division will be concerned with the Hanoverian accession, and carry us well into the reign of Queen Victoria, giving a general survey of the work of the Adam Brothers, Morris and Pugin, and Alfred Stevens, &c., a chronological list of useful data being appended.

Our object is to mark the progress of the arts by these three distinct divisions, rather than by reigns which are often somewhat misleading, although there are characteristic features in each reign forming sub-divisions which will be treated in their order.

The uniformity of detail noticeable in the work of the various Mediæval monastic orders had not died out when the Renaissance was introduced. The practice obtained throughout England, and is observable in the union which existed among the masons and artisans, whose work—especially the branches relating to joinery, plaster work, and masonry—is to be found in similar treatment in widely removed districts.

This was so also in the periods covered by the second division, but in a less degree towards the closing years, except in ecclesiastical edifices, which maintained their Gothic tradition throughout, in spite of Wren's noble effort to convert them to the Italianised manner.

This latter branch, however, does not come seriously within the purview of these articles, one or two notable examples only being referred to.

In the last division there were many ups and downs, even amounting to chaos, as it appears to us, viewed from the perspective afforded by the lapse of years, the redeeming feature being the bold work executed under the Georges, which was the natural offspring of the earlier examples left by Inigo Jones and Wren. The early years of the nineteenth century are marked by much individual specialisation and a veritable fight between the Mediæval and Classical schools.

With the death of Henry VII. the full-flavoured Gothic saw its doom, its last expression being rendered at King's College Chapel, Cambridge, and the Lady chapel at Westminster Abbey, in the centre of which is to be seen the first work of the transition—namely, the tomb by Torregiano—where there also existed a reredos and altar by him, now destroyed.

Our reference to the Abbey calls, incidentally, for some remark upon the wonderfully unique collection of monuments of all ages contained in that fane, from which may be traced more effectually than in any other edifice the changes which transpired in the masons' art or craft.

Torregiano's presence in England was, perhaps, not so much an event of purpose as it was of accident consequent upon his unconquerable jealousy of Michael Angelo Buonarroti, upon whom he left that mark of his displeasure and envy at the skill and enthusiasm that sculptor exhibited in his student days, which resulted in a permanent facial deformity. His expulsion from Rome led his steps, in common with other foreign workers, to England, having doubtless heard of the grandeur of the Court of Henry VIII., and he consequently sought employment from Wolsey and the King.

The works at Hampton Court date from about 1515, or six years after Henry VIII. ascended the throne, but the decorative work can hardly have been executed before 1520. The Great Hall was built between 1531 and 1533. Nonsuch House was Henry VIII.'s hobby, and the following account may not prove uninteresting:—

Evelyn supped in Nonsuch House, Surrey, on January 3, 1666, "whither the office of the exchequer was transferr'd during the plague, at my good friend's Mr. Packer's, and took an exact view of the plaster statues and bass-reliefs inserted 'twixt the timbers and punchions of the outside walls of the Court; which must needs have been the work of some celebrated Italian. I much admir'd how it had lasted so well

and intire since the time of Henry VIII., expos'd as they are to the aire; and pity it is they are not taken out and preserved in some dry place; a gallerie would become them. There are some mezzo-reliefs as big as the life, the storie is of the Heathen Gods, emblems, compartments, &c. The Palace consists of two courts, of which the first is of stone, castle like, by the Lo Lumlies (of whom 'twas purchas'd), the other of timber, a Gothic fabric, but these walls incomparably beautified. I observ'd that the appearing timber punchions, entrelices, &c., were all so cover'd with scales of slate that it seem'd carv'd in the wood and painted,* the slate fastened on the timber in pretty figures, that has, like a coate of armour, preserv'd it from rotting. There stand in the garden two handsome stone pyramids, and the avenue planted with rows of faire elmes, but the rest of these goodly trees, both of this and of Worcester Park adjoining, were fell'd by those destructive and avaricious rebels in the late warr, which defaced one of the stateliest seats his Majesty had."

An even earlier example in which the transition is noticeable is the north side of the Star Chamber (1500 A.D.), which was removed to Leasowe Castle, Cheshire, in 1836, the seat of the Hon. Lieutenant-Colonel Cust.

We may gather what constituted the decoration of an early interior from Shakespeare's description of Imogen's chamber:—

It was hang'd
With tapestry of silk and silver; the story
Proud Cleopatra, when she met her Roman,
And Cydnus swell'd above the banks, or for
The press of boats or pride: a piece of work
So bravely done, so rich, that it did strive
In workmanship and value; which I wonder'd
Could be so rarely and exactly wrought.

The chimney
Is south the chamber, and the chimney-piece
Chaste Dian bathing: never saw I figures
So likely to report themselves: the cutter
Was as another nature, dumb; outwent her,
Motion and breath left out.

The roof o' the chamber
With golden cherubins is fretted: her andirons—
I had forgot them—were two winking Cupids
Of silver, each on one foot standing, nicely
Depending on their brands.

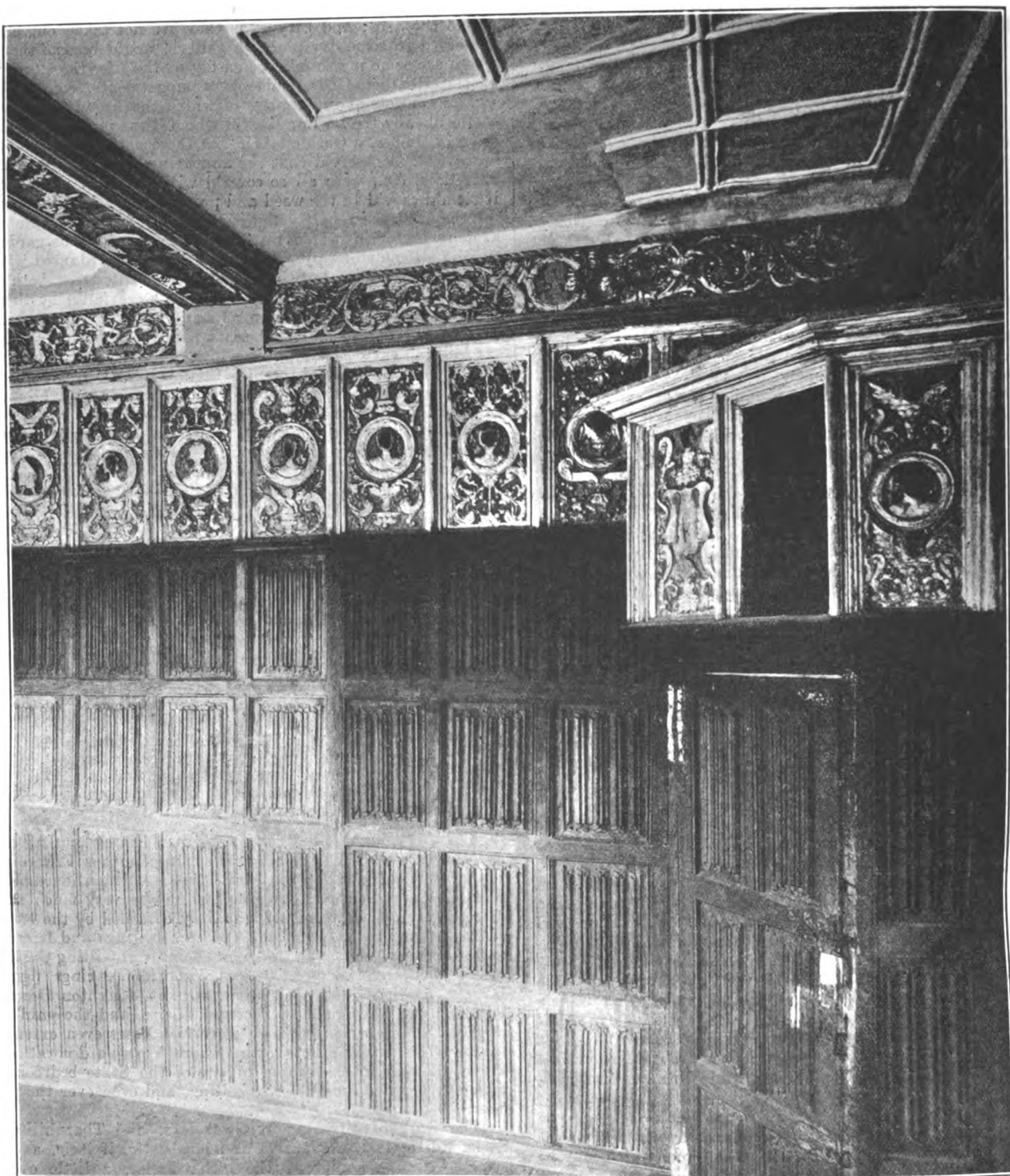
There is a notable difference discernible in comparing the decorative work of England with that of either France or Italy, that whereas in the countries last mentioned the painter was pre-eminent, in England he was very much at a discount, the decorations being mainly obtained by the effect of tapestries, wood panelling, plaster ceilings and friezes, with few exceptions, as in the great chamber at Gilling Castle, where the frieze is painted and armorial bearings figure largely, as they do also at every turn at Boughton House. Later on the ceiling spaces increase in size, and the painter is given an opportunity which in certain cases even extends to the walls, as at Chatsworth, where Verrio's decorations are to be seen in the chapel of one of the State bedrooms, which is painted from floor to ceiling, and even over the jib door.

The work of Streater at Swakeleys, and Thornhill at Stoke Edith, is less offensive and bombastic, if it is, as in some of the examples of the latter artist, a little overpowering.

The evolution of the wood panelled wainscot work forms an interesting study, there being a traditional sequence from mediæval days, as has been clearly shown in Messrs. Gardner and Stratton's "Domestic Architecture of the Tudor Period." Prior to its adoption, the stone walls of the hall in most of the larger mansions and castles were ornamented with trophies of the hunt and warfare, and the smaller rooms were hung with tapestries.

English domestic life, differing largely from that of Italy or France, was fostered by the comparative peace which was maintained. There were few invasions, if there were many civil wars, and fewer marauding bands of troops likely to molest the peace of the inhabitants between the reigns of Henry VIII. and Cromwell, whereas Continental history bristles with strife. Our decisive wars with foreign nations being chiefly fought at sea, and internal or civil wars mostly

* This system of slate covering has been called into question owing to Pepys saying it was lead gilt, but there is in Tudor Street, Exeter, an old house which at one time was covered with tiny slates about 6 inches by 3 inches with scalloped ends, a portion of which still exists to the verandah or bay roofing. There are other houses similarly treated at Dartmouth. Pepys tells us that he saw many fine paintings at Nonsuch, apparently the work of either Rubens or Hans Holbein.



THAME PARK, OXFORDSHIRE.

confined to distinct areas, resulted in the preservation of many specimens of ancient, mediæval, and good renaissance work, from which one can compile a fairly accurate account of its development.

The foreign talent employed by Henry VIII. and Wolsey is responsible for much of the change that took place in the decoration of the ceilings and interiors of English mansions. Nor was this employment of foreign talent confined to Tudor times, for in the seventeenth century our intercourse with Holland caused many changes to take place in the decoration and construction of English mansions, as the introduction of the sash window about 1670, the effect of which was to alter the whole complexion of interior design, bringing about that verticality of treatment associated with French work.

We owe the extraordinary preservation of Wolsey's closet to its having been bricked up for over two centuries. The room is wainscotted with linen carved panelling to a height of about 8 feet, over which are painted canvases of a continuous historic subject, occupying three sides of the room. The fireplace, window mullions, and reveals are stone; the leaded lights are of the diamond shaped order. The ceiling is

composed of small panels, square and lozenge shaped alternately, divided by wood ribs. The joints are covered by a large headed nail, which secures four lead leaves, doubtless owing to the method of mitreing being then, apparently, unknown.

The colouring of the ceiling and frieze is chiefly azure blue and gold, which combinations obtained in most of this class of work upon the Continent. The devices on the moulded papier-maché panels are the Prince of Wales's feathers alternating with the Tudor rose, while the frieze is allegorical with the motto R*DOMINVS . MICHI . ADIVTOR recurring at intervals, which is similar in treatment to the frieze of the Tudor room at Magdalen College, Oxford.

The panelling at Boughton Malherbe manor-house has carved panels with a dark blue ground. The pattern—with reversing curves having vine and grapes ornament, heraldic and other devices—is similar in treatment to that at a farm house in Kent; Layer Marney Towers, Essex, and the door of St. Clement's, Norwich. The Italian arabesque frieze is, however, applied, not carved out of the solid, as are the panels.

The examples of carved panels from Waltham Abbey, now

in the South Kensington Museum, are of considerable interest, as showing the early jointing by means of the mason's mitre. The panelling at the Guildhall, Exeter (1556), is so executed, the upper panels having semicircular heads, the inner mouldings of which are carved in a variety of ways, giving a pleasing variation to the long, continuous row of panels. The building was carefully measured in 1875 by Mr. J. Crocker, of Exeter, and published in the *Building News*, and subsequently in a monograph he wrote in conjunction with the half-timbered (or pan and post) houses, interiors and ceilings of Exeter.

At the Commandery, Worcester (the Hospital of St. Wulstan, founded 1085), there is some very early panelling with vertical ribs. The ceiling ribs have carved bosses of earlier Tudor origin, but the Prior's room, here illustrated, has the usual sixteenth-century panelling of the time of Elizabeth, and was probably one of the alterations carried out by Thomas Wylde. The very fine Elizabethan bed forms a central object in the photograph. In Henry Shaw's "Specimens of Ancient Furniture" (1836) there are coloured illustrations of several notable beds of all periods, notably the velvet bed from Hardwick Hall and those from Goodrich Court and Ware; the last mentioned is immortalised by Shakespeare's Sir Toby Belch.

Haddon Hall, Derbyshire, contains panelling of several periods, from the time of Sir Henry Vernon's occupation (deceased 1515) to much later date. The long gallery (1530 to 1624) was altered in the time of Sir George Vernon, who died in 1567, and Sir John Manners made further additions.

The panelling in the drawing-room is later, having mouldings within the panels. The dining-room panelling is plain, with the exception of the frieze panels, which are carved with heads and other devices. The windows contain several different periods of glazing.

In the round tower of Thame Park, Oxfordshire, is a very old panelled room with Tudor linen carved panels, a rather later frieze of panels carved with busts in the roundels, and an ornamental frieze of very similar character to that of Wolsey's closet.

Judging from the portion of the ceiling which remains, the example would date a little later, or about 1530 A.D., and is based on the old system of wood formation. In early ceilings the construction of the floor above was clearly indicated, the main beams being moulded and the cross joints intersecting a few inches above the soffit. Bosses and tracery formed the principal decoration, as is instanced in the example illustrated in Messrs. Gardner and Stratton's work before mentioned, taken from the Palace Yard at Westminster.

(To be continued.)

SEWAGE TREATMENT—ADVANTAGES OF LAND OVER ARTIFICIAL SCHEMES.*

FROM the Public Health Act of 1875 passing into law to a very recent date, it was the invariable practice of the Local Government Board to refuse sanction to any loan for sewerage or sewage disposal works where there was no provision of a suitable area of land for sewage outfall works (usually called a sewage farm); a very wise precaution, because such land not only provided a site for whatever works might be adopted, but also for the deposit of house refuse where it could be properly dealt with, and if properly laid out would deal with the sewage in all exigencies, accidents and instances where artificial schemes failed. But recently the Local Government Board, with its present President, has not strictly adhered to this rigid stipulation. The agitation against it was very strong for many years, and led to the appointment of a Royal Commission on May 7, 1898, with Lord Iddesleigh, C.B., as President, to inquire and report:

I. (1.)—"What method or methods of treating and disposing of sewage," &c., "may properly be adopted," &c. (2.) "If more than one method may be so adopted, by what rules, in relation to the nature or volume of sewage, or the population to be served, or other varying circumstances or requirements, should the particular method of treatment and disposal to be adopted be determined"; and

II. "To make any recommendations which may be deemed desirable with reference to the treatment and disposal of sewage."

The first result was the issue of a short interim report in 1901, which expressed the opinion that downward filtration and broad irrigation were the best means to adopt; the Local

Government Board's rule for insisting on land was a good one; stiff clay land was unsuitable, but no land was useless. Much depends on the depth of top soil, but a larger area helps.

The report then dealt with artificial processes then in use—namely, closed and open septic tanks, chemical treatment, subsidence tanks, contact beds and continuous filtration in various combinations, arriving at the conclusion that it is possible to do with artificial schemes in some cases (Leeds and Manchester), but no general rule was possible for dispensing with land.

At the health congress at Exeter, August 1902, Lord Iddesleigh is reported to have said: "They (the Commission) would soon, he hoped, be able to publish the results of a prolonged investigation into the treatment of sewage on land; their experts were now making elaborate parallel examinations of some of the processes of filtration by artificial means..." "The subject was inexhaustible." The position seems to be much the same to-day. The Commission is still investigating, but has issued seven reports, of which, for the purpose of this paper, the fifth is interesting. It refers to 144 meetings and the examination of 204 witnesses.

On page 18 we read: "It is true that at (several towns are named) and elsewhere crude sewage has been satisfactorily purified in filters with almost complete absence of nuisance, but at most of those places this plan has been abandoned, because of the rapid choking of the filters." Page 22: "As regards the second claim, we find as a result of a very large number of observations, that the sewage issuing from septic tanks is, bacteriologically, almost as impure as the sewage entering the tanks." Page 44: "In the majority of cases we think it would be better to adopt chemical precipitation rather than septic tanks as the preliminary process for very strong water-closet domestic sewages."

Contact beds and percolating filters, with sprinklers or other distributors, are more favourably spoken of, the latter being the more efficient. After very exhaustive detail of automatic gear, loss of capacity, construction, dimensions, size and grading of filtering material, cost, &c., and a general summary favourable to percolating filters, except that they are more liable than contact beds to nuisance from smell and flies, we find these general conclusions, namely:—

"We are satisfied that it is practicable to purify the sewage of towns to any degree required, either by land treatment or by artificial filters, and that there is no essential difference between the two processes, for in each case the purification, so far as it is not mechanical, is chiefly effected by means of micro-organisms."

"The selection of a method of sewage disposal should depend primarily on local conditions."

"If a sufficient quantity of good land, to which sewage can gravitate, can be purchased for about £100 an acre, land treatment would usually be the cheapest method to adopt."

"In cases where only clay land is available, it would generally be cheaper and more satisfactory to provide artificial filters."

In comparison of effluents "judged by chemical analysis," the report says, "both classes of effluent possess similar qualities."

As regards eight farms not eliminating suspended solids, the average purification was about 98 per cent. as regards seven contact bed plants, but eliminating suspended solids 93.4 per cent.; as regards six installations of percolating filters, after eliminating suspended solids was 99.4 per cent.

There is one other great disadvantage in contact beds and percolating filters which applies to a great number of cases—i.e., where a low-lying district or area gives a low gradient to the stream which has to receive the effluent. Land treatment presents no difficulty. Screening and detritus chambers can be made shallow, and the carriers follow the contour lines, but the depth of each contact bed or percolating filter must be added where adopted, often necessitating raising the sewage.

Attention was then directed by the author to successful instances of land treatment at Redruth (Cornwall), Wokingham (Berks), the Berlin sewage farms (43,009 acres), and the Aldershot Camp Farm.

An interesting discussion arose on the paper contributed by Mr. John Manley, C.E., when Colonel Jones who, at the age of eighty years, is retiring from the management of the Aldershot Camp Farm, said that the profession of the civil engineer as defined in the Charter of that Institute was that they should apply the great sources of power in Nature to the use and convenience of man. It was not that they should try to destroy all the microbes they found, but that they

* Abstract of a Paper by Mr. John Manley, C.E. (Member of the Sanitary Institute), read at the Sanitary Institute Congress.

should give facilities for their action. He was always a believer in the microbes which existed in the land, and he thought it was pretty well acknowledged now that the natural purification was most effective. It was true that they tried to force the microbes to do more than they wanted to and the result was clogging of the filter beds. It was becoming more and more understood that land must be properly attended to, and from the first he had tried to get the best agricultural labourers he could, and interest the men in their work; and he believed a great deal of the success he had attained was due to the admirable assistance he had received from old-fashioned agricultural labourers. A sewage farm could not be managed like an artificial system according to fixed rules, but the attention of the employees from the highest to the lowest must be constantly engaged if there was to be a success. Therefore, the Local Government Board were perfectly right in insisting on the proper management of the farm. It was no good simply pouring the sewage on the land and letting it take its chance, for it was this which led to the outcry against sewage farms. He had at first to fight chemical precipitation until Mr. Dibdin came to his rescue with the biological system. Now the cultivation of bacteria was becoming better known, and he was prepared to leave it to the younger generation. He viewed the promised land, but he could not enter into it himself.

Professor Tyndale said that as scientific adviser to the War Office he had for many years had intimate knowledge of the Aldershot Camp Farm. In the early days of his appointment he was asked to make a report upon it, and he had hoped to have shown that the whole system was wrong. He then advised the appointment of Colonel Jones, and with his advent the aspect of the place completely changed, and the farm was reorganised. A short time ago the question arose as to whether it would be more economical to adopt artificial sewage treatment at Aldershot instead of the farm. He made an inspection, and he found no artificial treatment which would give better results or effect any economy over the sewage farm. When the artificial treatment of sewage first came prominently before the public, as in all cases of this sort, the public seemed to rush headlong into the matter, and everything had to be biological treatment, just as now it seemed as if everything must be ferro-concrete. A vast number of artificial schemes were adopted, some of which were good, some indifferent, and some bad. He was a man of naturally open mind, and with the position he held he was obliged to have an open mind. He supposed there was no system of artificial sewage treatment with which he was not intimately acquainted, and he was not prepared to say that artificial treatment was a black sheep. There were, in his mind, thousands of cases where artificial treatment practically must be adopted, and where it gave all the results which could be desired. It was absurd in many cases to say they must have land treatment. On the other hand, he was very glad to think that since that wave of mania for artificial sewage treatment the poor old dying sewage farm had risen from the wreck, and there were many instances where the sewage farm was and would always prove to be the correct method.

Mr. Lacey (Oswestry) said he did not think the greatest advocate of artificial treatment of sewage would be at all inclined to lay down the proposition that it was superior to land treatment, given the proper land on which to deal with the sewage. There was no question at all but that the absolutely natural method was in every respect the best. But they owed something to science also, and the earlier attempts to deal with the matter scientifically did not deserve the sneers of Mr. Manley.

Mr. Upson (Maidenhead) pointed out that Aldershot was really a great natural bacteria bed, and he was surprised to hear what it cost to deal with the sewage, and thought there were many engineers who would be glad to do it at one-third the cost. He took it that everyone would like to treat their sewage on land, but they knew that in the neighbourhood of large towns that was absolutely impossible.

Mr. Watson (Birmingham) said he was acquainted with many men specially interested in biological treatment, and he did not know any who really condemned the land system. After all, a bacteria bed was only a concentrated sewage farm, and the whole process was a biological one. But they must not run away with the idea that because at Nottingham and Aldershot they had fine land for this method of treatment that therefore they could purify the sewage of Glasgow or Manchester or Bradford or Birmingham in the same way. At Birmingham they had bought six miles of the Valley of the Tame, and to cope with the increase of the population they found it necessary to cut 1½ acres a week. It was not

first-rate land, and in many cases they had had to pay £164 an acre for land almost of the nature of peat, which, of course, was throwing away ratepayers' money.

Dr. Fowler (Manchester) said he had read a great deal in the reports of the Royal Commission which had been of great use to him. One point to bear in mind was that if they poured sewage over freshly ploughed land for a certain time the effluent from that particular land would not be good. A good deal of the prejudice against land treatment was owing to the fact that the same scientific care had not been put into it as was perhaps the case with the more popular artificial methods.

Mr. Manley, in reply, said he had no wish to condemn artificial methods unnecessarily. All he suggested was that more care and consideration should be given to land treatment in certain cases.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

II.—PLANS.—VAULTING.—TRIFORIA.—CLERE-STORIES.—COLUMNS.

(Continued from page 60.)

It was pointed out in the preceding article that in all Italian churches the derivation of the plan from that of the ancient basilica remained through all the styles. Generally, it may be observed that the Italians were singularly retentive of any plan they had once adopted. They never rose to the conception of one, for instance, such as we have in our cathedrals. If we take a large Pointed church of the fourteenth century, like Sta Croce at Florence, we find an aisled nave leading to the transept which is very wide, but which does not project much, if at all, beyond the aisles; and on its eastern face a very shallow choir, with a row of chapels, sometimes, as in the example above quoted, as many as five on either side of it.

In numerous instances the choir of these vast churches is square-ended, as, for instance, in the Dominican churches at Perugia and Lucca, and in those built by the Franciscans at Pisa, Siena, and Viterbo. The apsidal east end was, however, more generally used in the North of Italy, as in Sta Anastasia at Verona, in the two great churches built by the Dominicans and Franciscans at Venice, and in that raised by the latter at Bologna; but it is strange that the Italians should so very rarely have built an aisle and chapels round it, though they must have been aware of the singularly fine effects that their neighbours were achieving at the same time.

The reason for this is not very hard to find. Like the German architects of the thirteenth and fourteenth centuries, the Italians were extremely tenacious, and when, as was very often the case, a Middle Pointed cathedral or church was reared on the site of a Romanesque one the old aisleless apsidal termination was adhered to.

Square east ends are found in the cathedrals of Orvieto and Siena, and in the church of Sta Maria Novella at Florence, where it has quite an English appearance, lighted as it is by three large lancet windows completely filled with ancient stained glass of the most magnificent description.

The east end of Sta Croce is more Italian. It has, as already observed, a central apse and five chapels opening from the transept on either side, giving internally a range of no less than eleven altars, all opening directly into the transept. Externally, each aisle of the apse of Sta Croce is gabled, as at San Fermo Maggiore, Verona. Each transept is roofed with two gabled roofs facing the east, and below is a succession of smaller gables over the chapels. But the whole elevation is not so striking as might be expected from its extent and importance. The truth is, the arrangement of the outline is unskilful, whilst the detail is all as poor and meagre as it can well be. Indeed, the majority of the great brick churches built in Italy by the Preaching and Mendicant Orders cannot be said to compete in point of harmony of outline or delicacy of detail with those raised in Germany under the same influences at Erfurt, Halberstadt, Ratisbon, Lubeck, and elsewhere, or with that superb English example, now St. Andrew's Hall, at Norwich.

Perhaps the most pleasing, because they have aisles to their naves, and in some cases a procession path to their apses, are the Santi Giovanni e Paolo and Sta Maria del

Frari at Venice, Sta Anastasia at Verona, San Francesco at Bologna, San Lorenzo at Vicenza, Sta Maria Sopra Minerva at Rome, and those with which these articles are more immediately concerned, Sta Croce, the typical Franciscan town church of Central Italy, and Sta Maria Novella, as representative a work of the Dominicans, both in Florence.

A whole article might be devoted to the explanation of the various developments of plan which the necessities of the apse and its corona of chapels gave rise to. There is no feature in which so much varied ingenuity has been displayed by the mediæval architects, and to the French (of the North especially) the palm must be awarded in this matter. None others were so capricious or so bold. In Amiens, Beauvais, Bourges, Notre Dame at Paris, Rouen Cathedral, and Le Mans Cathedral, not to mention others, we find the most perfect arrangements—surpassed, it may be, in some respects, in that of Toledo.

At Clermont-Ferrand, Limoges, Bordeaux, Aach, Narbonne, and Toulouse, in the southern half of the country, the architect of Amiens undoubtedly gave all his lines and plans to the designers of those noble cathedrals, as undoubtedly he did to Cologne, and not improbably to Leon in Spain; for of all French apses that of Amiens is the most perfect. The east end of the church (formerly the cathedral) of St. Nazaire at Carcassonne approaches more nearly to the Italian arrangement than any of the writer's acquaintance in France. Here the apse, which is pentagonal, without procession path or clerestory, is separated from the crossing by one intermediate bay, flanked on either side by three square-ended chapels opening from the transepts, these chapels being divided from each other and the intermediate bay by open stone screens. Such an arrangement, it is almost needless to say, produces an effect of lightness and elegance unsurpassed by any work of its period, the first half of the fourteenth century, the ensemble being enhanced by the magnificent stained glass of the same period with which most of the windows are filled.

The Italians and Germans never attempted to compete with the French, for though they constantly made use of the apse, many of those built by German architects between the thirteenth and sixteenth centuries being of great beauty, as at Münster, Soest, Erfurt, Meissen, and Naumburg, it was in a far less happy way, and our own ancestors were early led to abandon it in favour of the square east end with its great wall of stained glass, which, though it may be as noble in its effect, is neither so ingenious nor so bold in its construction.

If we compare an ordinary Italian groined church with a French or English example, we shall find one very marked difference in their plans. In the former each bay of the nave is square, and hence each bay of the narrower aisle is oblong, with the greatest width towards the nave; in the latter, on the contrary, the aisle compartment is square, and that of the nave oblong, with its narrowest side towards the aisle. Hence in the former the points of support are farther apart, and at the same time, no doubt, the whole building loses much of its present scale. The Duomo at Florence, for instance, has but four bays in its vast nave, and the eye refuses to be convinced, by the practical measurement of the foot, of the real dimensions of the building. The object always seems to have been to obtain as few points of support as possible in a given area; but there is no real gain in this. The points of support in the Italian churches were larger, and the cost in the end was probably much greater than in the apparently more intricate and complex plans of the French and English architects. The science displayed in their planning was, therefore, of a superficial and mistaken description, and not really equal to that which marks the work of their northern competitors.

In Italian Gothic work we observe a spirit of horizontalism which opposes itself to the all-pervading verticality of our mediæval architecture. In the larger diameter of shafts, and in their frequent use as single supports, reminiscences of Greece or Rome readily suggest themselves. The Pointed arch, moreover, had not only to admit a rival, but even seemed unable to hold its own. The Italians loved the round arch, while they only tolerated the Pointed form. Ignoring buttresses, they tied their arches together with iron rods, and seemed to be incapable of those daring feats of construction so familiar to Gothic architects elsewhere.

Repose and breadth of effect had more charms for the Italian mind than the bold projections, the deep shadows, the mysterious intricacy, and the complicated details of the northern work. They had broken, indeed, with the simple lintel construction of Greece, but the arches of Rome were less easily forgotten, and their employment less readily renounced. The graceful campanile of Giotto at Florence

illustrates the peculiarities of Italian design touched upon, and they may be the more readily understood by the student who observes the contrast it presents to the towers and spires with which English eyes are familiar.

The great church of Sta Maria del Fiori—the cathedral of Florence—stands forth as a giant, disdaining ornament or smallness of detail. Its features are few, simple, and almost colossal in scale. The elaborate details of Giotto's tower, with the numerous parts of small dimensions, and the high finish, both of the design and its execution, bring out the hugeness of the Duomo by the force of contrast, while the tower, in its turn, gains somewhat in exchange.

The cathedral of Florence illustrates, first, the plainness and simplicity of plan already remarked upon. It was commenced by Arnolfo di Lapo towards the close of the thirteenth century, and shortly before his death, which occurred in 1300, and it is uncertain how far he had been enabled to carry his ideas into execution. He is usually credited with the general conception, the arrangement of the plan, and the construction or design of the vaulting, always excepting the dome, which was added long after by Brunelleschi. Arnolfo's design for covering the space now crowned by the dome is involved in mystery. It is supposed that he intended to raise his roof immediately over the piers and above the first cornice, so that the line of springing should coincide with that of the nave vaulting. He was an architect of great reputation, and was largely employed by the Florentines, some of his works still remaining as embellishments of their fair city. He united, as did most architects in those times, the practice of military engineering to that of his own art, and some portion of the outer defences of Florence were constructed by him. He designed the great municipal Palazzo dei Signori, as well as the loggia of Or San Michele, the church of Sta Croce, a huge cruciform building, with the arches of its nave carried upon octagonal columns, a lofty clerestory, low-pitched roof of wood, and an apsidal choir with five square-ended chapels on either side of it.

In the Duomo, Arnolfo has bequeathed to us the largest church constructed in Italy in the Middle Ages, and, although it presents many features unpleasing to a northern eye, is interesting as an example of late thirteenth-century Italian Gothic on a large scale.

How sharply the design of Florence Cathedral contrasts with such a building as Westminster Abbey may be seen by placing their plans side by side.

In the Italian church we have a nave 250 feet long but only of four bays, while in the English one we find twelve bays in a length of 233 feet. Each church is divided transversely into nave and aisles, but these divisions occupy a space of 125 feet at Florence and only 75 feet at Westminster. At Florence we find a grand central space surmounted by a Pointed dome, with an apsidal choir and transepts, also apsidal, all alike covered with semi-domes.

The Italians evidently admired the transverse-triapsidal arrangement as much as the Rhenish people of a much earlier epoch, and it was afterwards adopted for St. Peter's at Rome. This preference for a semi-circular form as the termination of the three arms of the cross may have been caused by reminiscences of the old basilicas. It is found in the Church of the Nativity at Bethlehem, and as remarked above, was not uncommon in the churches of Western Germany and that part of France neighbouring to it. In the former we find it in three of the Romanesque churches at Cologne—Sta Maria in Capitolio, the Holy Apostles and St. Martin, also in the early thirteenth-century churches of Bonn and Neuss, both in opposite directions about twenty miles from Cologne. Remarkable complete Gothic instances of this transverse-triapsidal plan may be seen in the Liebfrau-Kirche at Treves and St. Elizabeth at Marburg; while in France the great church at Noyon is, and the cathedrals of Cambrai and Arras, both destroyed in the cataclysm of the French Revolution, were similarly planned. Tournai Cathedral, beyond question the finest and most architecturally interesting of Belgian churches, preserves the old apsidal form of its transepts; its choir was rebuilt on a much more colossal scale at the end of the thirteenth century.

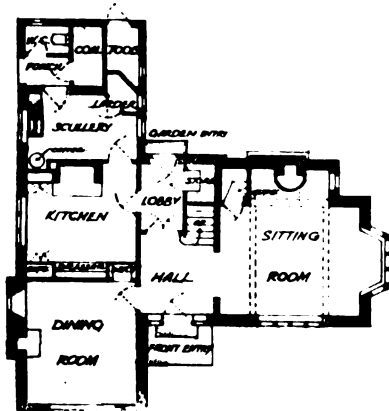
Such buildings illustrate the basilican arrangement of plan which Arnolfo adopted at Florence; and apart from all questions of style, they seem to deserve the attentive study of architects who are called upon to provide interiors capable of accommodating large numbers of persons.

In the churches of the Middle Ages generally, large free spaces were not felt to be required. The service was, on the worshippers' part, to be an act of faith, rather than of

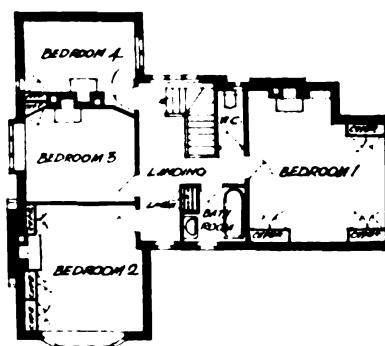


THE GIDEA PARK COTTAGE

MICHAEL BUNNEY & CLIFFORD MAKINS, A.R.I.B.A.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

actual participation. Long naves and aisles were needed for processions, and long choirs for the clergy.

The English architect of the present day has other problems to solve, and may well find, in some of the simpler basilican plans, models deserving his careful attention.

The scale of the Duomo at Florence is too colossal to be pleasing, since it has the character of a small design unduly magnified. On entering the nave the four great arches, although well and gracefully proportioned, have a bare and unsatisfactory effect, and on passing from the nave to the central area under the dome, this feeling is intensified.

The nave should lead up to something grander than itself, and so indeed it is, as far as mere dimensions are concerned, for the dome is 137 feet in diameter, and about 280 feet high. These grand dimensions are, however, to a great extent, thrown away, by reason of the paucity of detailed parts of moderate size—notably windows, which in the Florence Duomo are miserably inadequate to the vast wall spaces, to serve as a scale for the whole.

The usual plan of single wide arches is sometimes deviated from and improved by having two bays of each aisle opening with two arches into each great vaulting-bay of the nave, so that every bay of groining throughout the church is very nearly square. This plan, which occurs in Sta Maria del Carmine, built in the fourteenth century, at Pavia, is a common one in the Early Gothic churches of Germany, as, for example, the cathedrals of Brunswick, Naumburg and Osnabrück, and the churches at Lippoldsberg, Marienfeld, Riddagshausen and Neuss—and is one of the many indications of similarity between German and Italian work which might be adduced were it within these limits to enter upon so engaging a question.

The same absence of subdivision is apparent in the elevation of each bay of an Italian church, where, in place of the

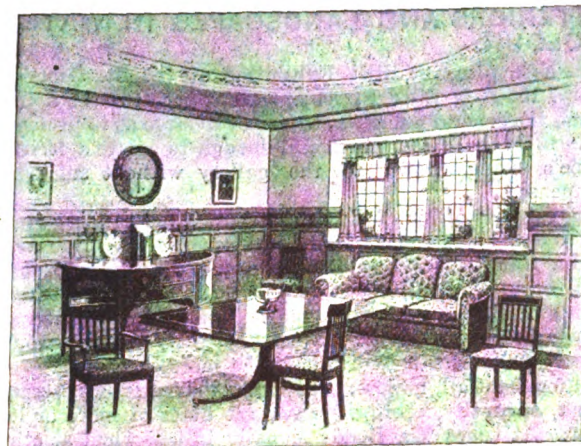
triple division in height of the great northern churches, with their well-accentuated proportions and beautiful variety of detail, we have, in such buildings as the cathedral at Arezzo, Sta Maria Novella, Florence, and Sta Maria Sopra Minerva, Rome, a singularly meagre design perpetually repeated, and consisting generally of simple broad arches with a small circular clerestory window above them, and no other kind of decoration, save where the painter has come with his ever-ready art to the rescue of the apparently incompetent architect.

As in France, Belgium, and Germany, vaulting in Italy was almost always much simpler than with us, rarely advancing beyond the plain quadripartite or four-celled one. In Italy, perhaps, this was intentional as giving free scope for the exercise of the painter.

Several large Gothic churches, notably the cathedral at Orvieto and Sta Croce, Florence, were never vaulted at all, and in very many cases the Romanesque churches still retain those low-gabled wooden roofs which, if somewhat rude in construction, are far more pleasing than the feeble ribless quadripartite vaulting which in almost all the Romanesque churches at Lucca was added in Renaissance days, when the clerestories were either built or rebuilt. The old wooden roofs, such as may still be seen covering Sta Maria della Pieve at Arezzo, San Miniato at Florence, Sta Maria Maggiore and San Pietro at Toscanella, San Giovanni Zoccoli at Viterbo, Sant Andrea at Pistoja, and San Frediano at Lucca, are at any rate truthful, while the flat coffered ceilings of the Renaissance such as we see in Sta Maggiore at Rome, Pisa Cathedral, and San Giovanni at Lucca do not accord ill with the early character of those buildings. The very wide churches without aisles, alluded to as having been built under the auspices of the religious orders, almost invariably have timber roofs; that at San Fermo Maggiore at Verona is of the most elaborate construction, taking the shape



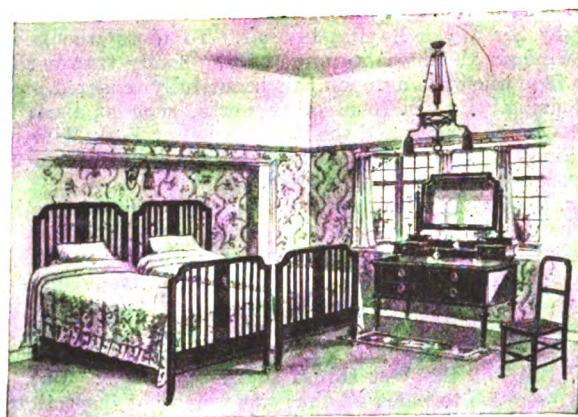
LIVING ROOM.



DINING ROOM.



BEDROOM NO. 1.



BEDROOM NO. 2.

of a number of cusps. Such a roof as this hardly admits of intelligible description, and it must suffice to say that, filled as it is with intricate panelling, adorned with paintings of saints in long arcades, and spanning a church of some 50 feet in width, it would be difficult to instance a finer example anywhere. The construction is very much the same as that of our double hammer-beam roofs, supposing every pair of rafters to be framed to the hammer-beam shape, and boarded and panelled on the under side. Similar roofs may be seen in the church of the Eremitani, Padua, another vast aisleless church, and in San Zenone, Verona. The roofs covering the naves of Orvieto Cathedral and Sta Croce, Florence, two aisled and clerestoried churches of the first class, are the very simplest pieces of unaffected carpentry, with no ornament and but little enrichment in the shape of colour, and were probably introduced from the inability of their respective architects to cope with the difficulties attendant upon vaulting over such wide spaces. In both these churches the aisle roofs are of the simplest wooden lean-to kind.

As a rule the vaulting over cloisters in Italy is of a meagre, ribless description; we meet in them nothing comparable in richness and intricacy with the vaulting of our English cloisters, which, as the style of architecture grew later and richer, only increased in boldness and complexity.

The triforia and clerestories of the churches in Central Italy demand a few words. The former are comparatively rare, and are to be met with almost exclusively in churches of the Romanesque period. Pisa Cathedral has a most beautiful triforium arcade, composed in the nave of a continuous series of round-arched compartments, each of two divisions, which are separated by a single circular pilaret. The tympanum of the enclosing arch is solid, and the pier between each bay is composed of four pilasters grouped against a square nucleus. A remarkable feature in this cathedral is the manner in which the columns and arches separating the nave from its inner aisle on either side—for Pisa Cathedral is one of the very few Italian churches designed with double aisles—are carried across the arches opening into the transepts, and with them the triforium arcades. By this means the cruciform plan of the church is lost internally, but an appearance of greater length is conferred. Genoa Cathedral has also a fully developed tri-

forium, somewhat similar in character to that at Pisa. In the Genoese example there is no floor to the triforium gallery; consequently, its arcades are visible, as at Modena Cathedral, from the aisles, which thus attain an unusual height.

The choir of that most picturesque of Southern French churches—St. Paul Serge at Narbonne—the nave of Rouen Cathedral, and that of the collegiate church at Eu, near Tréport, present examples of the floorless triforium. Several churches in Genoa and its neighbourhood have their triforium arches visible from the aisles, so that this feature may be regarded as a local one.

(To be continued.)

A GIDEA PARK COTTAGE.

WE illustrate a typical cottage for this Garden City, the particular building being erected at the White City, Shepherd's Bush, its structural value, completely finished, being about £900. About one-third of this sum can, we understand, be saved by the use of still simpler finishings. It is but two years since the foundation-stone of the first house on this historic Essex Estate was laid, and it has developed very largely in the interval.

One of the attractions in all garden suburbs must be the facility for speedy communication with the City itself; and in this instance, as there are some ninety trains in and out daily between Gidea Park and Liverpool Street, with a fast train run of only twenty-five minutes, this attraction is well satisfied.

Some misconceptions have arisen as to conditions of holdings; but it would seem that the Company desires to meet the wishes of proposing occupiers as far as possible, and are not only prepared to sell freehold, but alternatively to grant ninety-nine years' building lease or to enter into tenancy agreements.

The cottage illustrated is designed by Messrs. Bunney & Makins, and speaks for itself. We are not impressed by the amount of space, but it may be that a family of four would manage to shake down in it. The furnishing, by Messrs. Oetzmann & Co., Ltd., of Hampstead Road, is attractive, though we confess that it appears to us to be excessive in value, compared with the cost of the house; in a sample cottage it would have been advisable to exhibit furniture more in accordance with relative value.

THE LATE MR. W. J. BODDY'S CHURCH INTERIORS AND LANDSCAPES IN WATER COLOUR.

THIS was a pleasant little Exhibition at the St. George's Gallery, 108 New Bond Street; pleasant both for the architect and the general public. It was not so large as to promote weariness of the spirit, nor small enough to create a feeling of one's being drawn to the gallery without sufficient recompense.

The subjects of Mr. Boddy's sketches, if not ranging from John o'Groats to Land's End, still covered the large area between Cumberland and Devonshire, besides some Continental work. Indeed, it was only a selection of Mr. Boddy's sketches that were in reality exposed to public view; had all of them been produced the area of country covered would probably have been found to be much more extensive.

Throughout all, however, the chord of sincerity was struck, though, naturally, there were variant notes of more or less power. At times Mr. Boddy signally failed, when at other times, in the same class of work, he succeeded quite as signally; for instance, in No. 6, a sketch of the ambulatory in Westminster Abbey, the touching-in of the clerestory window, with its rich tones of colour, could not have been done better by Sir Wyke Bayliss himself. To those who know these windows there was a sense of being bodily transported to the fane when gazing upon this beautifully-rendered piece of colouring. But in some other works, such as those in Christ Church Priory and the Lady chapel at York Minster, the stained glass was very poorly represented, with a lamentable lack of "values" in evidence.

Mr. Boddy had a feeling for vistas, and in this connection may be instanced such sketches as "Tewkesbury" (No. 10), where the church tower fills in the background, and "The Market Place, St. Albans." Again, the artist could present sunny effects well, and wielded a good brush for depicting stonework; his sepia work was very vigorous. In "Mont St. Michel," "Whitby," and "Staple Inn, Holborn," we noted three of the best things in the collection. But, in truth, were we to name all that was worthy of inspection it would read like a catalogue, and, despite the merits of these works, this would make but poor literature. Therefore, we must be satisfied with the few individual references that indicate possibly their personal appeal to us, superadded to their undoubted merits.

ARCHITECTS' AND SURVEYORS' APPROVED SOCIETY.

THE Architectural Association, in conjunction with the Royal Institute of British Architects and the Surveyors' Institution, have had under consideration how best the interests of their members and those in their employ who come within the category of insured persons under the National Insurance Act may be promoted.

After consultation with insurance experts, they have come to the conclusion that the formation of a special "Approved Society" for Architects' and Surveyors' assistants and clerks would prove advantageous to those concerned, for two simple reasons, viz. :—

1. That their average health, as a class, is good.
2. That the proportion of persons passing out of the category of insured persons is higher than in non-technical professions and businesses; and that as a consequence the funds available for benefits in addition to those provided by the Act would be larger than in societies with a miscellaneous membership.

Subject to sufficient numbers being obtained, it has been decided to found such an approved society, and we should be glad to have (on the accompanying form) the names of any of your assistants or others who would be prepared to join.

As a membership of at least 5,000 is necessary in order to form a separate entity for insurance purposes, it is hoped that your support may be relied upon in furthering an effort which should prove of benefit to those in the professions who come within the provisions of the Act, by asking your clerks and others who are eligible and would like to join, to sign the enclosed form.

There is nothing to prevent persons who may have already enrolled themselves in a non-professional society from transferring their membership, and, for the reasons stated herein, there would seem to be definite advantages to be gained by their so doing.

All persons engaged in architects' and surveyors' offices and earning less than £160 per annum are eligible for membership.

It is of the greatest importance, owing to the shortness of time, that the enclosed form signed by the applicants, with their addresses, should be returned in the envelope sent herewith not later than September 16 next.

18 Tufton Street, Westminster, S.W.

August 8, 1912.

Dear Sir,—We enclose a circular with reference to the formation of an "Architects' and Surveyors' Approved Society" under the Insurance Act, 1911. The proposal is supported by the following members of the two professions :—

Sir Aston Webb, C.V.O., C.B., R.A.

Sir Ernest George, A.R.A.

Sir Alexander Stenning, F.R.I.B.A., F.S.I.

W. Edgar Horne, M.P., F.S.I.

Leslie R. Vigers, F.S.I.

G. Corderoy, F.S.I., and Professor Reginald Blomfield, A.R.A., F.S.A., President of the Royal Institute of British Architects.

A. W. S. Cross, M.A., F.R.I.B.A., George Hubbard, F.S.A., F.R.I.B.A., Ernest Newton, A.R.A., E. Guy Dawber, F.R.I.B.A., Vice-Presidents of the Royal Institute of British Architects.

Hon. Edward Gerald Strutt, F.S.I., President of the Surveyors' Institution.

John Farrer, F.S.I., W. Edward Woolley, F.S.I., H. Chatfield Clarke, F.S.I., F.R.I.B.A., Edward Blakeway P'Anson, F.S.I., F.R.I.B.A., Vice-Presidents of the Surveyors' Institution.

Gerald C. Horsley, F.R.I.B.A., President of the Architectural Association.

W. Curtis Green, F.R.I.B.A., Maurice E. Webb, M.A., Vice-Presidents of the Architectural Association.

We hope that you will give us every assistance in the matter.—Yours faithfully,

F. R. YERBURY,

Secretary Architectural Association.

IAN MACALISTER,

Secretary Royal Institute of British Architects.

A. GODDARD,

Secretary Surveyors' Institution.

NOTE.—All communications for the present to be addressed to the Hon. Secretary, 18 Tufton Street, Westminster, S.W.

BOOKS RECEIVED.

- "Motion Study." A method for increasing the efficiency of the workman. By Frank B. Gilbreth, Member of the American Society of Mechanical Engineers. With an introduction by Robert Thurston Kent, editor of "Industrial Engineering." (London: Constable & Co., Ltd. 4s. 6d. net.)
- "Garden Suburbs, Villages, and Homes." Illustrated articles by Raymond Unwin, G. L. Sutcliffe, W. H. Brown, Bryce Leicester, J. H. Greenhalgh, Henry Vivian, John S. Nettlefold, the late J. M. Ludlow, T. Nicolson, Eversley Hampton. (London: Co-partnership Publishers, Ltd. 6d. net.)
- "Old Towns and New Needs." Also the Town Extension Plan. Being the Warburton Lectures for 1912, delivered by Paul Waterhouse, M.A., and Raymond Unwin, F.R.I.B.A. (Manchester: At the University Press. 1s. net.)
- "Memorials of Old Nottinghamshire." Edited by Everard L. Guilford, M.A., author of "Little Guide to Nottinghamshire." Illustrated. (London: George Allen & Co., Ltd. 15s. net.)
- "The Cathedrals of England and Wales." Being a fourth edition of "English Cathedrals," illustrated. By Francis Bond, M.A., Lincoln College, Oxford; Hon. A.R.I.B.A., &c., &c. (London: B. T. Batsford. 7s. 6d. net.)
- "The First and Chief Grounds of Architecture." By John Shute, paynter and archyctecte. First printed in 1563. A facsimile of the first edition, with an introduction by Lawrence Weaver, F.S.A., Hon. A.R.I.B.A. (London: "Country Life," Ltd. 15s. net.)
- "Suggestion for Remodelling the Front Block of the National Gallery and Laying out Trafalgar Square." By H. Heathcote Statham, F.R.I.B.A. (London: Sprague & Co., Ltd. 2s. 6d. net.)

The Architect.

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FORTHCOMING EVENTS.

Saturday, August 24.

Architectural Association Camera, Sketch, and Debate Club :
Week-end at Winchester and Romsey.
Sanitary Inspectors' Association : Northern Centre Annual Meeting at Chester-le-Street.

Monday, September 2.

Northern Architectural Association : Students' Sketching Club.

Wednesday, September 4.

British Association Annual Meeting, Dundee (September 4-11).

Saturday, September 7.

Architectural Association Camera, Sketch, and Debate Club :
Walking Expedition, start at Dorking.

THE DANGER OF DEEP EXCAVATIONS.

WHILST it does not often occur in architectural practice that excavations are of such depth as to be termed "deep" when compared with those that an engineer has to supervise, it does occasionally happen that architects have to deal with basements and sub-basements of a considerable depth, and more often it is the case that the excavations for a building must be carried on in a soil which from its nature is prone to create danger, or from its confined situation and proximity to adjacent buildings is subject to risk. Hence the report of a Departmental Committee, appointed by the Secretary of State for the Home Department, on the dangers attending deep excavation, must be of interest to architects, even though the reference to the Committee limited their inquiry into such dangers "in connection with the construction of docks and other similar works." The Committee, however, did not limit their inquiry and taking of evidence merely to excavations in connection with docks, but appear to have considered that the inclusion in their reference of "other similar works" gave them considerable latitude and allowed them to obtain particulars of dangerous excavations for sewers, tunnels, reservoirs, canals, &c.

The evidence, which is voluminous, is interesting and obtained from witnesses of various grades, from chief engineers and contractors to timbermen and gangers. The timbering of trenches appears from the evidence to be of supreme importance and the adequacy of timbering a matter that often calls for instant decision of the man on the spot, so that the leading timberman should have considerable experience and have the call of a plentiful supply of timber. Although, as we have already explained, the main objective of the inquiry was deep excavations, it would appear that in such depths as 12, 14, or 15 feet, depths common enough in building work, there might be much danger from the improper or inadequate use of timbering, particularly when the contractor is a small man or a jerry-contractor. A big contractor with a really deep excavation is likely to take proper precautions, aided by an efficient staff of experienced timbermen, gangers, and assistant engineers, against an accident, which may very likely be serious and cost him thousands of pounds, but the small man, or the builder who has cut his price fine to get a job, will often take risks and leave an open trench at night insufficiently timbered, to find it in the morning fallen in, as has happened in our own experience and, no doubt, in that of many other architects. The accident might have occurred in the day-time and a man or two might have been buried alive, so although the scope of the Departmental Committee was with reference to deep excavations, and particularly those concerned with docks, the evidence obtained was instructive also for work of far less magnitude.

Indeed, in their general conclusions and recommendations the Committee state that, while giving special attention to really deep excavations, and particularly those in connection with the construction of docks, they have also considered what might be termed relatively shallow trenches. This explains why the report and the evidence are of value in architectural, as well as engineering practice. The Committee found a difficulty in precisely defining a deep excavation, but considered that as the more prominent dangers are associated with trenches exceeding 10 feet in depth, excavations under this limit should be exempt from the regulations they proposed for minimising the dangers of deep excavations.

The most threatening danger of deep excavations, in our opinion, is the falling in of the sides, and to the minimising of this the Committee gave the greater part of their time and attention; but after the examination of numerous witnesses, they came to the conclusion that the difficulty of fixing definite standards for timbering trenches is insurmountable. To begin with, the site may be on land wholly or partially covered with water, the soil to be excavated may be hard and compact, wet or dry, water-bearing or impervious to water, gravel, mud, running sand, clay, rock, or any combination of these. Not only is it impracticable to lay down rules which shall be applicable in all cases, but any preconceived plan of timbering for a particular job may be found, when the excavation has progressed a certain distance, to be quite insufficient, or possibly unnecessarily heavy. All the witnesses were agreed that the details of timbering must in the end be left largely in the hands of the timbermen. No amount of theoretical knowledge will teach anyone this work; it must be acquired by practical experience in the trench. Emergencies arise where prompt action is essential to avert catastrophes; hence it is highly important that only men of sufficient experience should be employed as gangers and timbermen.

Holding these views the Committee recommend that, although no definite rules universally applicable can be laid down as to the method to be adopted for supporting the sides of deep excavations, yet such trench work should in all cases be under the direct control of some person of wide experience above the ganger. They also recommend that all trenches should be carefully inspected in detail by a competent person at least once a day, and that a register should be kept at the works of the daily inspection of all trenches, with a record of the observation by the inspector of any unusual or special features of the work.

Specific regulations are suggested dealing with the use of explosives in blasting operations, which are largely based on quarry experience, but which we need not examine in detail, as they very rarely occur in connection with building operations.

The remaining recommendations of the Committee are

of obvious utility—the protection by fencing of persons from falling in to the excavations and in loose soils the use of skirting boards to prevent material falling into the bottom; the provision of fenced gangways across the excavations; the use of emergency ladders, and on a site covered with water of life-saving appliances; the proper lighting by night of gangways, intermediate landings, and the tops of ladders; the provision of ambulance appliances and the maintenance of existing regulations enforceable under the Factory and Workshop Act, 1901, affecting the generation and use of electricity; the annealing of chains, and the statutory provisions dealing with the examination of steam boilers; the reporting of accidents, however caused, and the powers of inspectors.

IN PRAISE OF SLATES.

By CLOUGH WILLIAMS-ELLIS.

(Concluded from page 80.)

THE size, shape, and thickness that the slates should be is for the architects to say. The quarries simply make what they are asked for, and up till now the chief demand has been for large thin slate, 20 in. by 10 in., and the like, no one knows why, save that it has somehow come to be the standard stereotyped specification, and has been blindly followed by succeeding generations of builders, and even architects.

The odd thing is, however, that these large lanky "Ladies," "Countesses," and "Duchesses," as they are termed (precedence going with size), are not by any means the cheapest, though their eminent suitability for commercial work generally and for the roofing of large areas seems sufficiently to justify their still reasonable price.

Undoubtedly the Festiniog group of quarries, being possessed of exceptionally high grade rock capable of conversion into these large size slates of extreme thinness (the test of good slate metal) have pushed this special line as being more distinguished than the making of small rough slates, slates that other quarries having only inferior rock could produce more or less successfully. Thus it is that one has come chiefly to associate with "Portmadoc" the "big thin slate of commerce," and even architects don't seem to realise that though the converse is not true, where such are made, any other size, thickness, shape, and, to some extent, texture of slate can be made much easier. You have merely got to state your wants and await delivery.

The large, light, thin slate, the "Pride of Portmadoc," is probably unassailably secure for all time, as the standard roofing, with reference to which all other materials the world over are classified and compared, but for domestic work, for cottage and garden city work, a homelier, humbler, more "textured" slate is demanded.

And the cost? Well, within limits the smaller and rougher the slate the cheaper it is, not only in the quarry yard, but on the roof, when due allowance has been made for the extra labour in laying, the extra battening and nails, and such small increase in the roof scantlings as may be necessitated by the slightly greater load of small slates as compared with large.

That is probably news to four builders out of five, and also, I'm afraid, to nine architects out of ten.

All things considered the 14 in. by 7 in. Portmadoc blue-grays are probably the cheapest roof material.

The *cheapest* form of the world's very *best* material. That is a bold assertion. It is for the quarries to make good, and they do.

"Portmadoc" is perhaps rather a misleading word to use—it being merely the *port of shipment* for the slates of the Festiniog district quarries—some half score in number, and a dozen miles and more away. Still, "Portmadoc" having come to stand exclusively for the products of these quarries, I employ the name as popularly understood to avoid confusion.

The following is an extract from "The Formation and Composition of Slate," by Moses Kellow, M.I.C.E., F.G.S. (London), who has courteously placed much technical information at my disposal.

CHEMICAL COMPOSITION.

The silicates of alumina and iron are chemically inert and incorrodible. The doubtful constituents are lime and magnesia, but the presence of these does not necessarily imply deleterious matter in the composition of the slate. Where, however, carbon dioxide is present a strong inference exists that the lime and magnesia will be found in the form of carbonate, in which case they are perishable.

From the following table it will be apparent that approximately nine-tenths of the best Welsh slate consists of chemically inert silicates, and that deleterious carbonates are entirely absent:—

Class of Slate.	Silicates.	Lime and Magnesia.	Carbon Dioxide.
Festiniog average of six analyses	89.42%	2.52%	None
Penrhyn, Bangor, Purple	86.69%	2.59%	None
Velinheli, Blue	88.57%	2.71%	None
Llangollen	76.77%	7.30%	3.71%
American Old Bangor	83.02%	7.07%	6.40%
American Albion Bangor	80.75%	6.19%	5.52%
American Vermont Sea Green	80.82%	5.61%	2.98%
American Vermont Red	79.94%	8.82%	3.77%

The corresponding figures for French slates are inferior to those given for American.

The remaining items of common occurrence in the analysis of Welsh slate consist of small percentages of the following:—

Potash, a constituent of muscovite.

Soda, a constituent of muscovite.

Titanic acid, a constituent of rutile.

Manganous oxide, a constituent of rhodochrosite.

Phosphoric oxide, a constituent of apatite.

Water of crystallisation.

None of the minerals here referred to are liable to decomposition by atmospheric agency.

STRUCTURE.

Structurally slate may be divided into two classes, which merge imperceptibly into one another—i.e. (a) Clay slate, consisting of the original elastic particles compressed together, the cleavage being due solely to compression; and (b) mica slate, in which the original material has been converted into mica, an elastic, strong, and highly cleavable mineral. As the plane of crystallisation of the mineral coincides with that due to compression, the cleavage of the slate is much improved, and its strength and elasticity are increased. Festiniog slate is a mica slate.

MECHANICAL TESTS.

RESISTANCE TO THRUSTING STRESS OF 3 IN. CUBES.

Festiniog slate (Kirkaldy's tests)	2,126.7 tons per sq. ft.
" " "	1,771.3 " "
" " "	2,163.7 " "
" " "	mean 2,020.6 " "
Aberdeen granite (Hudson)	
Beale's authority)	850.5 to 1289.7 " "
Cornish granite	955.9 " "
Limestone	62.5 to 552.6 " "
Brick, common	52 to 130 " "
" machine pressed	125 to 170 " "

TENSILE STRENGTH.

	Lb. per sq. inch.
Festiniog Slate (Kirkaldy)	7,135
" " "	7,012
" " "	6,451
Granite (Bauschinger)	622
Marble (strong white Italian) (Trautwine)	1,034
" (other white)	734
Dolomite (Bauschinger)	388
Sandstone (Trautwine)	105 to 590
Oolites	100 to 200
Brick	40 to 400

TRANSVERSE STRENGTH.

Load applied on centre.	Equivalent for Beam 12x1x1.	Modulus of Rupture.
Festiniog slate, 12 inches wide, $\frac{1}{8}$ th inch thick, 22 inches between supports (Kirkaldy's Test), 164 lb.	902 lb. .	16,236
Ditto 178 lb.	979 .	17,622
Ditto 167 lb.	864 .	15,543
Ditto mean 166 lb.	913 .	16,434
Granite mean 100 .	100 .	1,800
Marble (strong white Italian)	116 .	2,088
" (ordinary white)	100 .	1,800
Dolomite	56 .	1,012
Sandstone	45 .	810
Oolites	35 .	630
Brick (common) 10 to 30 average	20 .	360
" (good pressed) 30 to 50 average	40 .	720

DEFLECTION.

Festiniog Slate (Kirkaldy's test). 22 in. between supports, 12 in. wide, $\frac{1}{8}$ in. thick, loaded and deflection measured in centre . . . . .	.52 in.
Ditto . . . . .	.59 "
Ditto . . . . .	.51 "
mean . . . . .	.54 "

This deflection in a slate of commercial size and thickness is remarkably high, and denotes extreme toughness.

ROYAL ARCHÆOLOGICAL INSTITUTE.

(Concluded from last week.)

Tuesday, July 30.

THE members of the Archæological Institute always cover a wide area at their summer meetings, and that of 1912 was no exception. Besides traversing Northamptonshire in many different directions, with the county town as a starting-point, their lines of travel projected into both Rutland and Huntingdon. It was in the latter county that the members stood after an hour's railway journey to Elton. But their object took them immediately back over the boundary and into Northamptonshire again, for the first place on the programme was

FOTHERINGHAY CHURCH.

While this building is, as Mr. W. H. St. John Hope remarked, simpler in its architectural history than any of the others visited in the course of the summer meeting, it was not the least interesting. A church undoubtedly existed at Fotheringhay at the time of the Domesday Survey, because a priest is mentioned in connection with it, and an earlier church stood on the present site. Leland writing of the village some centuries ago in his charming, quaint way, said that it had "but one street, all of stone building. The glorie of it standith by the parochie chirche of a fair buildid, and collegiated. There be exceeding goodly meadows by Foderingey." The parish church referred to went on until the fifteenth century. By that time, among a good many other changes, the manor had passed by grant into the hands of Edmund of Langley, the fifth son of Edward III. and Duke of York, who is sometimes said to have founded a college here. But he only projected it, the foundation really being due to his son Edward, who succeeded him as Duke of York. The foundation included a master or dean, a precentor, thirteen chaplain fellows, eight clerks, and thirteen choristers. Before his death in 1415 at Agincourt the founder took down the chancel of the existing parish church and erected in its place "a mighty fine quire." The process of reconstruction was continued by Richard of York, who was minded to build a nave equal in magnificence to the quire. There exists for the latter work—that extremely rare thing—the mediæval building contract. It is dated 1434. Unfortunately the original is lost, and the transcript in Dugdale's "Monasticon" is inaccurate. According to Mr. Hope, the man who transcribed it could not read it properly, and had transposed at least one important passage besides making other blunders. The contract is of sufficient interest to warrant its reprint as below:—

Articles concerning the new building of this church.

This Endenture maad bitwix Will. Wolston, Sqwier, Thomas Peckam, Clerke Commissaries for the hy and mighty Prince, and my right redouthid Lord the Duc of Yorke on the too part; and Will. Horwode, Free-Mason, dwellyng in Fodringhey on t'other part; wytnessith that the same Will. Horwode hath granthid and indertaken, and by thise same hath indentid, graunts, and undertakes to mak up a new body of a Kirk joyning to the Quire of the College of

Fodringhey, of the same hight and brede that the said Quire is of: and in length xxiiij fete fro the said Quere downward withyn the Walles (a metyard of England accountid alwey for iij fete). And in this Cuvenant the said Will Horwod shall also wel make all the ground-werk (=foundation) of the said body, and take hit, and void hit at his own cost, as latlay hit suffisantly as hit ought to be by oversight of Maisters of the same Craft, which (=with) stuff suffisantly ordeigned for him at my seide Lord's cost, as longeth to such a werke. And to the said body he shall make two Isles, and tak the ground . . . hem in wise aforesaid, both the Isles according to height and brede to the Isles of the saide Quere, and in height to the body aforesaid; the ground of the said Body and Isles to be maad within the ende under the ground table-stones (=plinth courses) with rough stones and fro the ground table-stones bo . . . ments, and alle the remanent of the said body and Isles unto the full hight of the said Quire with clene hewen Ashler altogedir in the outerside unto the full hight of the said Quire, and all the inner side of rough stone, except the bench-table-stones, the soles of the Windows, the Pillars, and Capettels that the Arches and Pendants shall rest upon, which shall be altogedir of Free-stone wrought trewly and dewly as hit ought to be.

And in eche Isle shall be Wyndows of Freestones, accordyng in all Poynts unto the Wyndows of the said Quire, sawf they shall no bowtels haf at all. And in the West-end of aither of the said Isles, he shall mak a Wyndow of four lights, accordyng altogedir to the Wyndows of the said Isles. And till (=to) aither Isle shall be a sperware (=square) embattailment of Free-stoon throughout, and both the ends embattailed butting upon the Stepil. And aither of the Isles shall have six mighty Botrasses of Free-stone, clen-hewyn; and every Botrasse fynisht with a fynial, accordyng in all points to the fynials of the said Quere, saf only that the Botrasse of the body shall be more large, more strong and mighty than the Botrasse of the said Quere.

And the Cler-story both withyn and without shall be made of the clene Asheler, growndid upon ten (viii) mighty Pillars with four respounds; that ys to say two above joyning to the Quere; and two beneth joyning to the end of the sayd bodye. And to the two Respounds of the sayd Quere shall be two perpeyn-walls joyning of Free-stone, then wroght, that is to say, oon on aither side of the myddle Quere dore; and in either wall three lyghts and lavatoris (=piscinae) in aither side of the wall, which shall serve for four Auters, that is to say, oon on aither side of the middel dore of the said Quere; and oon on either said of the said isles.

And in eche of the said Isles shal be five Arches abof (i.e. east of) the Stepill, and abof every Arche a Wyndow, and every Wyndow of four lyghts, accordyng in all points to the Wyndows of ther clere-story of the said Quere. And either of the said Isles shall have six mighty Arches butting on aither side to the clere-story, and two mighty Arches butting on aither side to the said Stepull, accordyng to the Arches of the said Quere, both yn table stones (=string-courses) and crestis, with a Sperware embattailment there-upon.

And in the North side of the Chirche the wa said Will. Horwode shall make a Porche, the owter side of clene Asheler, the inner-side of rough stone, containing in length xij fete, and in brede as the botrasse of the said Body wol soeffre, and in hight accordyng to the isle of the same side, with resorable lights in aither side, and with a square embattailment above.

And in the South-side of the Cloystre-ward another Porche joyning to the Dore of the said Cloystre, beryng wydenesse as the botrasse will soeffre, and in hight betwixt the Chirch and the said . . . Dore, with a Dore yn the West-side of the said Porche to the Town-ward; and in aither side so many lights as will suffice, and a square embattailment above, and in hight accordyng to the place where hit is set.

And in the West-end of the said body shall be a Stepyl standing (within) the Chirche upon three strong and mighty Arches (and) vawthid with stoon; the which Steepil shall haf in length xxiiij fete after the mete-yard, three fete to the yard above the ground-table-stones, and xx fete square wittyn the walls, the Walles beryng six foot thicknesse abof the said ground-table-stones. And to the hight of the said body hit shall be square with two mighty botresses joyning there-to, oon in aither side of a large Dore, which shall be in the West end of the same Stepill. And abof the Dore of the said Stepill a wyndow rising in hight also high as the gret Arche of the Stepill, and in brede as the body will issue. And in the said Stepill shall be two flores, and abof either flore viij clere-storial windows set in the myddes of the walle,

che window of three lights, and alle the owtter side of the Stepill of clen wrought Free-stone; and the inner side of rough ston. And in the said Stepill shall be a vice townyng, serving till the said Body, Isles and Quere, both beneth and abof, with alle manere other werke necessary that longhyth to such a Body, Isles, Stepill, and Porches, also well nought comprehendit in this Endenture, is comprehendit and expressyd.

And of all the werke that in thise same Endenture is devised and rehersed my said Lord of Yorke shall fynde the carryage and stuffe, that ys to say, Stone, Lyme, Sonde, Ropes, Boltes, Ladderis, Tymbre, Scaffolds, Gynnes, and all mannere of Stuffe that longeth to the said werke; for the which werke well, truly, and duly to be made and fynisht in wyse as it ys afore devised and declaryd, the said Will. Horwode shall haf of my said Lord ccc. (£300) Sterlingues: of the which summe he shall be payd in wyse as it shall be declared hereafter; that is to say when he hath takyn his ground of the said Kirke, Isles, Botrasse, Porches, and Stepill, hewyn and set his ground-table-stones, and his ligements (=base-mouldings), and the wall thereto withyn and without, as hit ought to be well and duly made, then he shall haf vii. li. xiijs. iiijd. (£6 13s. 4d.). And when the said Will. Horwode hath set oon fote abof the ground-table-stone, also well throughout the outerside as the inner side of all the said werke; then he shall haf payment of an c.l. (£100) sterling, and so for every fote of the seid werke, affir that hit be fully wroght and set, as hit ought to be, and as it is afore devysed, till it come to the full hight of the highest of the fynials, and batailment of the seyd body, hewyng, setting and reysing . . . of the Steple, after hit be passyd the highest of the Embattailment of the sayd Body, he shall but xxxs. Sterlingues, till hit be fully endyd and performed, in wise as hit is afore devysed.

And when all the werk abof written, rehersed, and devised is fully finisht, as hit ought to be, and hit is above accordyd and devysed betwix the seyd Commissaris, and the sayd William; then the seyd Will. Horwode shall haf full payment of the said ccc.l. Sterling, if any be due, or left unpaid thereof until hym. And during all the sayd werke the seyd Will. Horwode shall neither set mo nor fewer Freemasons, Rogh Setters, ne Levers thereupon, but as such as shall be ordeigned to haf the governance and ofersight of the said werke undre my Lord of Yorke well ordeign him, and assigne him for to haf.

And yf so be, that the seyd Will. Horwode mak not full payment of all or any of his workmen, then the Clerke of Werke shall pay him in his presence and stoppe als mykyll in the said Will. Horwode hand, as the payment that shall be dewe unto the Workmen comyth to.

And during all the seyd Werke the Setters shall be chosyn and takyn by such as shall haf the governance and oversight of the sayd werke by my seyd Lord; they to be payed by the hand of the sayd Will. Horwode, in forme and manner abof wryten and devysed. And yf be so that the sayd Will. Horwode wol complayn and say at any time that the two Setters, or any of them be not profitable ne suffisant Workmen for my Lordy's avayle; then by oversight of Master-Masons of the Countre they shall be demyd; and yf they be found faulty, or unable then they shall be chaunghyt, and other takyn and chosen in, by such as shall haf the governance of the sayd Werke by my sayd Lordy's ordenance and commandment.

And yf hit so be that the sayd Will. Horwode make nought full end of the said Werke withyn terme reasonable, which shall be lymit him in certain by my said Lord, or by his Counseil in forme and manere as is aforewritten and devused in these same Endentures, then he shall yeilde his Body to Prison at my Lordy's Will, and all his movable goods and heritages at my sayd Lordy's disposition or ordenance.

The contract seems to have been most faithfully carried out as the various parts are still almost exactly as described. The fact that William Horwode is described as a Freemason only means that he was a master man building on his own account wherever anyone wanted a church erected. The church, said Mr. Hope, compares in a very simple way with that at Windsor; it is now extremely plain, and no doubt derived much of its glory from the stained glass and the furniture. It is impossible to find details of the now vanished quire or its Lady chapel, as the site is now used as the churchyard. The quire stalls after the suppression of the college and the consequent decay of the quire are said to have been distributed in some of the neighbouring churches. In the chancel are two handsome monuments erected by Queen Elizabeth to shelter the bones of the founder

and his nephew, Richard Duke of York (A.D. 1460), father of Edward IV., whose neglected tombs she found in the roofless quire. The pulpit is a charmingly carved piece of fifteenth century work, which was given by Edward IV. The square tower is crowned with a tall octagon. Seen from the outside the church shows a preponderance of voids over solids. Close to the church is the field where once stood

FOTHERINGHAY CASTLE.

All that remains at Fotheringhay of this building is a shapeless mass of rubble masonry. Sheep and cows peacefully graze on the site of the great hall, where on February 8, 1586-87, Queen Mary was beheaded after five months rigorous imprisonment. At the foot of the great mount, first thrown up to command the Nene against the incursions of the Danes, grow thistles, locally known as "Queen Mary's Tears." The sole occasion on which the castle figured conspicuously was the grim one already mentioned. Up to 1215 the defences were all of wood. Upon the mount was set no doubt a wooden tower or citadel, approached by a flight of steps from the surrounding ditch, and encircled by a timber platform, while the banks which protected the attached courts or baileys were crested with stout wooden palisades. It was erected according to the ordinary mount-and-bailey plan of an early Norman castle by Simon of Senlis, Earl of Northampton, in the second half of the twelfth century. The mount stands at the south-west end of the bailey close to the river, and as usual had its own ditch, intersecting at two points with the ditch of the bailey. About the end of the fourteenth century the castle is said to have been rebuilt by Edmund of Langley, the tower being in the form of a fetterlock which was the family badge of the Dukes of York. It became the principal and favourite residence of the Plantagenets of York. Some two hundred years later it was given as a portion of the dowry of Catherine of Aragon on her marriage to Prince Arthur, and she, according to Leland, "did great costs of refreshing it." The castle was dismantled after 1625, and must have long been a rare quarry to building owners and contractors for miles around. The process of obliteration could hardly have been more complete. It is almost pitiful to hear that that sole remaining mass of rubble may soon be fenced in by zealous admirers of Queen Mary.

Mr. Hope said that a number of misguided people had subscribed money to put a railing round this piece of rubble. He described the proposal as the most preposterous thing he had ever heard, and said they would all wish the horrible thing away. A much better method of spending the money would be to set someone to dig for the foundations, and so ascertain the precise lay-out of the various buildings.

From this melancholy spot a move was made to

TANSOR CHURCH.

The exterior of this building gives little indication of the delight which awaits the visitor within. From the point of view of development of plan it is of the utmost interest. It began as an aisleless early twelfth-century church. About fifty years later aisles and a west tower were added. Early in the thirteenth century the north aisle was extended eastward, with a small vestry at its east end, to as far as the east wall of the chancel. The south aisle was also lengthened to a similar extent. Owing to the narrow bay formed by the vestry on the north side, the spacing of the north and south arcades is irregular. There are six bays on the north and five on the south side. Then the chancel was carried a short distance eastward, and finally the south aisle widened so as to include a transeptal chapel. A vice, made in the south-east corner of the tower in the thirteenth century, weakened the structure, and accordingly a new arch was built up inside the older arch in the east wall of the tower. Some of the stalls from the destroyed quire of Fotheringhay Church remain in the chancel, and are carved with interesting heraldic badges. The floor has a considerable rise towards the east and north.

Presumably it was questions of commissariat which sent the motor-cars due south to Oundle for luncheon, and immediately after that meal back north again to

WARMINGTON CHURCH.

It is claimed that this church is one of the very finest, if not the finest, church of its period—the Early English. According to Mr. Hamilton Thompson, however, it may have taken about fifty or seventy-five years in building. The arcades of the nave, with their tall arches and slender columns and delicate mouldings, have capitals which seem to belong to the latter part of the twelfth century. Apparently these columns and capitals were incorporated in the almost total rebuilding which took place in the middle of the thirteenth

century, when the chancel, aisles, clerestory, vaulted north and south porches and west tower with spire were erected. To this same period belongs the most peculiar feature of this beautiful church—namely, the ribbed wooden roof of the nave, closely imitating stone vaulting. The tower is full of interesting detail, especially the west doorway, with its trefoil head. Its broach spire has three rows of spire lights, whose gables are of sufficient projection to somewhat mar the outline and detract from the height. Both the chancel screen and the pulpit, which are elaborately coloured, are partly fifteenth century and partly new. There is a notable screen at the east end of the north aisle, combining Gothic and delicate Renaissance details which may possibly be the work of the man who put up the screen at King's College Chapel, Cambridge.

POLEBROOK CHURCH.

So far as the broach spire is concerned, the church at Polebrook might have been intended as a replica of that at Warmington. There, however, the resemblance ceases. The Polebrook plan is fascinatingly irregular, with a short nave and a long chancel, aisles of slightly differing width, and a north transept nearly half as deep again as that on the south. There is not much as old as the twelfth century. As at Warmington, the church owes most of its beauty to the works carried out in the thirteenth century by the lords of the manor, the abbot and convent of Peterborough. The thirteenth-century tower is not, as usual, at the west end of the nave, but adjoins its westernmost bay on the south side. There is an old rood-screen, with some remains of colour, and a plain Jacobean pulpit with an hour-glass in its bracket. The north transept has some curious and charming arcading on the east and west walls.

The programme did not allow much time for viewing this building, and that little was much curtailed by a discussion on a point raised by Sir Henry Howorth (President) as to whether Mr. Hamilton Thompson was justified in his belief that so many of the local eleventh-century village churches had originally a central tower.

OUNDLÉ CHURCH.

"Murray" says that Oundle is one of the pleasantest towns in Northamptonshire, with its broad, clean streets, picturesque oriel windows, and general air of antiquity. No visitor here will be disposed to challenge the claim. Every street appears rich in things to admire and bits to sketch. Unfortunately, time was short, and the programme only allowed for a halt at the Talbot Hotel and the parish church. The former offers both æsthetic and corporeal attractions of no mean order. The building materials are said to have come from Fotheringhay Castle, four miles to the north. It has a splendid staircase (very like that at Lyveden Old Building a few miles away), an excellent room upstairs with a fine fireplace, a picturesque courtyard, a typical gabled Tudor front, and, last but not least, an attractive table. The church is worthy of such a well-to-do town, and of its owners, the monastery of Peterborough. Hardly anything more of the twelfth-century building remains than the four piers which once supported a central tower and the two piers to the east of the crossing. Most of the long and lofty structure belongs to the thirteenth century. The present elaborate tower at the west end dates from towards the end of the following century, and succeeded the demolished central tower, while its tapering spire was apparently rebuilt in 1634, though there is no indication of Classic feeling about it. The vaulted south porch, with an upper chamber, was erected about 1485. The most interesting piece of furniture is the richly coloured fifteenth-century pulpit, which has only been slightly touched-up. There is also a good deal of old work in the screens between the chancel and the side chapels and in the rood screen. The sixteenth-century vestry on the north side of the chancel has an upper storey, which may have been intended either for an anchorite or for a sacristan. There is a large bone-hole beneath the south transept.

Oundle is particularly interesting in ecclesiastical history. St. Wilfrith of Northumbria, Archbishop of York, established a monastery here, and here he died in 709. His body was conveyed to Ripon.

In the evening Mr. Christopher A. Markham, F.S.A., read a paper on "Ancient Roads and Bridges in Northamptonshire."

Wednesday, July 31.

The final day of the Summer Meeting opened with what must be to archæologists the *pièce de résistance* of Northamptonshire—a visit to

BRIXWORTH CHURCH.

This is the most complete example in England of an early church on the basilican plan. Indeed, at one time it used

to be claimed that the present building originally served as a secular basilica. That theory, however, cannot stand the critical investigation which antiquaries now bring to bear upon their studies. But much remains to them, and they are content to know with practical certainty that the greater part of the present building is without doubt of Early Saxon origin, and was probably built about A.D. 680, when a monastery was founded here as an off-shoot of the Saxon abbey at Peterborough. Much Roman brickwork was re-used in the structure, which followed the ground-plan of early basilican churches. It now consists of apse, presbytery with south chapel, nave of four bays (originally aisled) with clerestory, and western tower with spire. The nave was originally divided from the presbytery by a screen-wall pierced by three arches, such as those of which traces are found in the Early Saxon churches of Kent and Essex. The lower part of the western tower was formerly a porch with an upper stage, a tall archway in the western wall, and smaller arches on north and south communicated with adjoining buildings, of which slight traces are left. This porch or fore-building was raised at a later date to form a tower, and a circular stair-turret was built against the west wall, the original archway being blocked up, and a smaller archway inserted. The apse, semicircular internally, but externally polygonal, may also have been reconstructed at this pre-Conquest period. The south doorway of the nave is of the end of the twelfth century. Additions of later periods are the thirteenth-century chapel south of the presbytery and the spire; the belfry stage of the tower was also reconstructed in the fourteenth century. A much debated point is the use of the passage (originally vaulted) which surrounds the foundations of the apse. This passage was entered by doorways in the east wall of the presbytery. Mr. Hamilton Thompson suggested that it probably formed the ambulatory of a crypt beneath the apse, which was filled up when the apse was reconstructed, and that the two shallow wall-recesses were provided as sort of manholes to prevent crushing when pilgrims came to visit the relic in the crypt.

A great debt is owing to a recent vicar, Mr. Watkins, who did much towards bringing to light the true character of this structure. The building seems to have been in a disgraceful state. The *Church Builder*, in a description of the work, said:—"Previous to its restoration the church was one of the most dilapidated and ill-arranged in the whole country. We are accustomed to speak of pews in some churches as pens, as boxes, as drawing-rooms; but, really, in Brixworth Church there were great pews which might almost be called houses, and there are small pews which might be termed hovels."

In the church are a stone reliquary supposed to contain the throat-bone of St. Boniface, a fifteenth-century screen between the chancel and the south chapel, and a thirteenth-century effigy. Brixworth Church was granted in the thirteenth century to the cathedral church of Salisbury, in which it formed a prebend annexed to the dignity of the chancellor.

The tourist may perhaps be pardoned for moralising if he passes from seventh-century Brixworth, which after more than twelve hundred years is still a place for prayer, to

HOLDENBY HOUSE.

Holdenby was one of the largest of the palaces, or palatial hotels, built by aspiring courtiers for the occasional accommodation of Elizabeth and James. It was the work of Sir Christopher Hatton, Elizabeth's Lord Chancellor ("the last and greatest monument of his youth," as he describes it), who in a letter to Sir Thomas Heneage in 1580 says he left his "shrine still unseen, until that holy saint (Queen Elizabeth) may sit in it, to whom it is dedicated." Of the enormous pile nothing remains except two large entrance archways, dumped down in a field, and one side of a court. Fortunately a survey was made of Holdenby in 1587, not long after its completion, and from this an excellent idea can be obtained of the surroundings of the larger Elizabethan houses. Mr. J. A. Gotch, who conducted the party, gives the following account of it in his "Early Renaissance Architecture in England":—"The road between two villages ran along the north side of the park, and from this road branched another one which led up to the house. While it traversed the park it was allowed to wind according to the undulations of the ground, but when it came to within a quarter of a mile of the lodge it was made perfectly straight, and so ran through the midst of 'The Greene'—'a large, long, straight, fair way,' as Lord Burghley called it. It led directly to the porter's lodge, which was a building separate from the house, and self-contained, and it passed the long range of stabling on the right. The porter's

lodge opened into the first court, the 'base-court,' as it was called, walled round and entered on its two sides by large gateways. At the further end of the base court stood the house, raised a few steps above the general level, where Lord Burghley 'found a great magnificence in the front or front pieces of the house, and so every part answerable to other, to allure liking.' The house was built round two great courts, the first 128 feet by 104 feet, the second 140 feet by 110 feet, comparable in point of size to those at Hampton Court, and a good deal more intricate in detail. To the north of the house itself were two walled gardens, of nearly an acre each, and beyond these were spinneys, or small woods, and the little village with its inn." As we have already said practically nothing more than the entrance gateways remain of this once proud dwelling. They bear the date 1583 and suggest foreign influence. As now seen they seem extraordinarily clumsy and arrogant. The house came into the possession of the Crown about 1608, and was one of the places of detention of Charles I. After his death it was sold, and soon afterwards it fell, or was violently hurried, into decay.

HOLDENBY CHURCH.

The most noteworthy feature of this small church is the fine Renaissance screen, said to have been brought from Holdenby House. It must remain a moot point as to whether or no it was designed as an ecclesiastical screen. In the chancel are eight stalls with misericord seats. The south chancel includes several brasses to the Hatton family, whose original manor house was close by.

The party returned to Northampton for lunch. A drive of a mile and a quarter, most of it along a finely timbered road, brought the cars to

EARL'S BARTON.

The great west tower of this building is, of course, known to all as the stock example of Anglo-Saxon work with its "long-and-short" quoins, and bands of strip work on the faces. It was probably built towards the close of the tenth century, and is considered to be contemporary with the lower portions of the towers of Barnack and St. Peter's, Barton-on-Humber. The rest of the church is of post-Conquest dates. Mr. Hamilton Thompson pointed out that the prevalent idea that Saxon ornamental strip-work and its concomitants were derived in the first instance from construction in timber seemed to be quite erroneous. Professor Baldwin Brown, in "The Arts in Early England," shows that at the time when these towers were in course of erection English building had come very much under the influence of Flanders and Germany, and that analogous examples to the strip-work exist in German churches of the same date. Another point to notice at Earl's Barton was that the baluster-shafts dividing the window openings are merely ornamental facings to the solid pieces of wall which form the actual divisions. The present battlemented parapet on the top of the tower is of course a subsequent addition. The wide archway from the tower into the nave was made late in the thirteenth century with a careful re-use of twelfth-century material. At that time the whole body of the church underwent considerable alteration, as again happened in the fourteenth century.

Mr. St. John Hope, in speaking of the strip-work, said that some time ago his attention had been called to some paintings discovered in North Africa, which showed Roman pilgrims in front of buildings which were ornamented in precisely the same way as this Saxon tower. It had to be remembered that when the Saxons came to England they brought no building tradition with them. In building their stone churches they used Roman materials and used them on the Roman model. So it is not to Germany that we must look for the prototypes.

Not far from Earl's Barton is one of the principal show places of the county, viz.

CASTLE ASHBY.

Every vestige of the mediæval castle which once stood here has now disappeared. The existing large mansion was commenced by Henry Lord Compton about 1585, and was finished in 1624. The bulk of this imposing house is of the Elizabethan type with mullioned windows. The south front is said to have been designed by Inigo Jones. The interior has undergone much renovation and, unlike some other Northamptonshire houses, arouses no misgiving as to the ability of the aristocratic owners to keep it up. The gardens and lay-out have always been noteworthy. A map of 1760 shows a fine avenue leading from each of the fronts. Shortly after this date great changes were commenced by "Capability" Brown; but his work was stopped owing to

the enormous expense of the Parliamentary election for the borough of Northampton in 1768. In that year Lords Halifax, Northampton, and Spencer each nominated their own candidate, and are said to have actually expended no less than £400,000. The election was referred to the House of Commons, and had finally to be decided by the toss of a coin. Lord Northampton was beggared by his outlay of £150,000, and had to cut down his trees, sell his furniture at Compton Wynyates, and spend the rest of his life on the Continent. A conspicuous feature of this splendid house is the lettered stone balustrade round the top of its four sides, forming the text "Nisi Dominus ædificaverit," &c.

The final visit on this very rainy day was to

COGENHOE.

The church of Cogenhoe, as we have it now, dates, according to Mr. Serjeantson, mainly from the thirteenth and fourteenth centuries. There are, however, small portions of an earlier church still remaining. The chancel was rebuilt about the year 1225. An interesting feature of it is the beautiful arcading which runs along the north and south walls. Within the arcades on the south side are pairs of ancient lights; on the north there are only two arcade arches; in the middle of this wall is an interesting Easter Sepulchre above two aumbries. During the third quarter of the thirteenth century the nave was rebuilt, doubtless by Nicholas de Cogenhoe, whose family had held the manor since the time of Henry II. His arms occur four times on the capitals of the nave arcade. He also built the north chancel chapel; the permits are still existing authorising him to have from the royal forests five oaks fit for timber, and a further four oaks which were probably required for this purpose. Nicholas was evidently a favourite with Edward I., who in 1275 granted him three tuns of the royal wine with which his son might keep the feast of his inception as Master of Arts at Oxford. Three years later the King granted Nicholas a tun of the royal wine for his own use. Later the Keeper of Northampton Park was ordered to send to him twelve live hares for the stocking of his grove. In 1345 the Coroner's Rolls for Northamptonshire record the case of a fugitive taking sanctuary in this church. A certain Ralph Caponn robbed a man of 10s. in the wood of Harpole, and for fear of arrest took sanctuary in the neighbouring church of Ecton. He confessed his crime to the Coroner two days later, but was unwilling to abjure the realm. He stayed in the building thirty days before he managed to escape, but the hue and cry was soon raised, and he was glad to take sanctuary in the church of Cogenhoe; there he again confessed his crime, abjured the realm, and was despatched to Dover. Among the interesting things inside the church are the effigy of Nicholas de Cogenhoe in full chain armour (1281), a map of the parish drawn up in 1630 for Mr. Francis Cheney, and more especially the quaint and vigorous heads carved on the nave capitals and about the church. In the porch is a holy water stoup of late fifteenth or early sixteenth century date. On the east gable is a beautifully sculptured stone cross, carved on all four sides. It bears representations of the Holy Trinity, the Crucifixion, St. Peter, and St. Paul.

ILLUSTRATIONS.

CARVED SPANDRIL, STONE CHURCH, KENT.

This church, erected about 1245, is one of the best examples of Early English work, and has been considered, by good authority, to have been designed by the architect of Westminster Abbey. Its ornament shows that skill and taste that prevailed among the freemasons at that period, such as can be seen in York Minster, Wells Cathedral, &c., and the drawing (from a cast) shows the finest example of carved foliage of that period that exists. It shows the spandril of the arcade with conventional foliage, a striking feature of which is that the stalk is always present, the object being that the foliage should seem to grow out of the shaft as naturally as the branches grow out of a tree trunk. The drawing reproduced was awarded a prize in the monthly competition of *The Architect Students' Sketching and Measuring Club*.

COMPETITION DESIGNS FOR NEW HEAD OFFICES OF THE PORT OF LONDON AUTHORITY.

We this week illustrate the design submitted in the preliminary competition by Messrs. G. Berkeley Wills, A.R.I.B.A., & Cecil Burns, and also that sent in by Messrs. P. Hubert Keys, A.R.I.B.A., & F. Dowdeswell, A.R.I.B.A.

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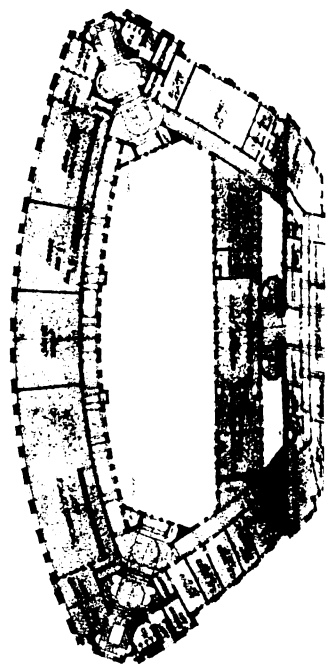
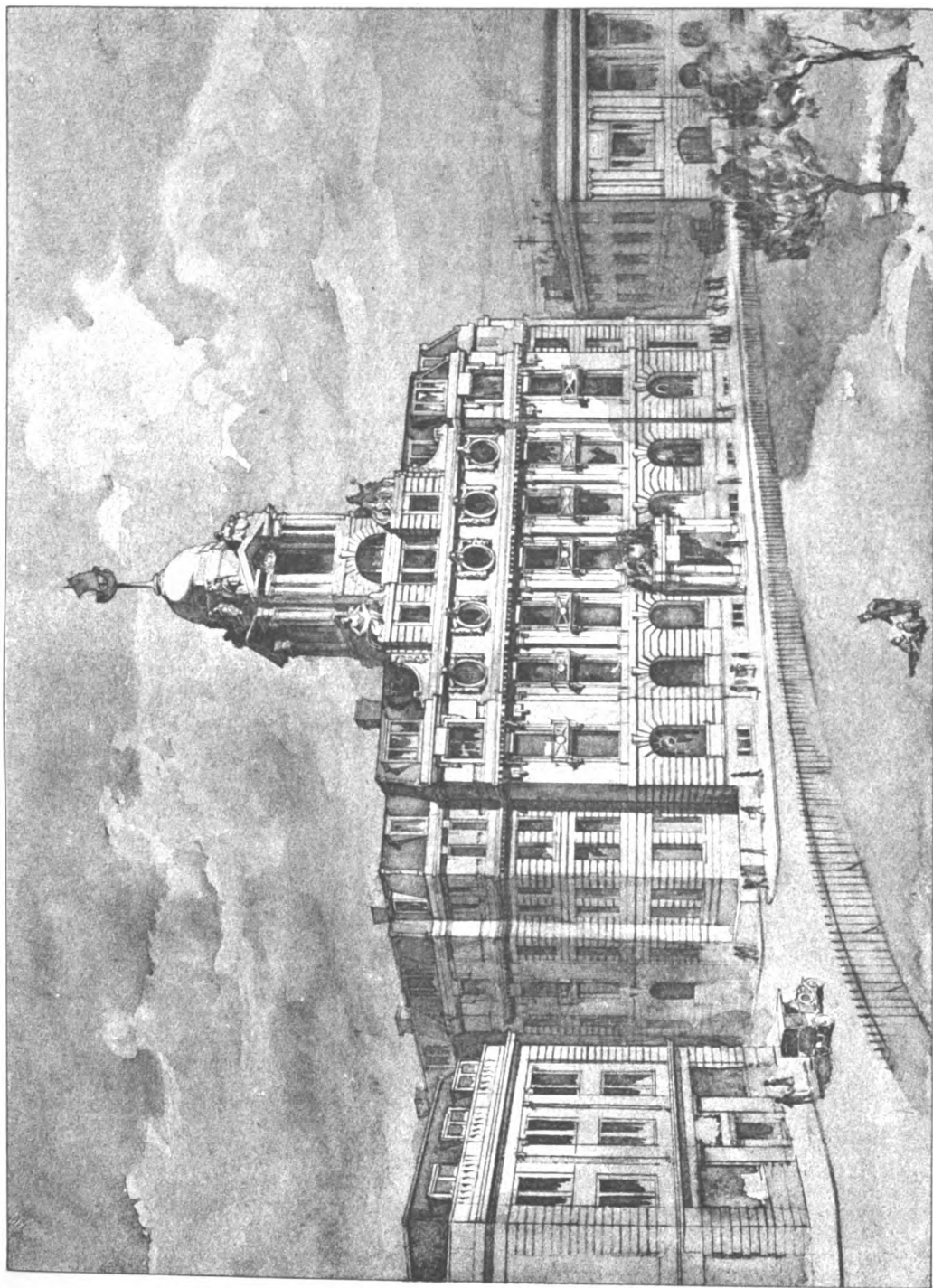


STONE * CHURCH * KENT
DETAIL OF CARVED SPANDRIL TO ARCADE ♣
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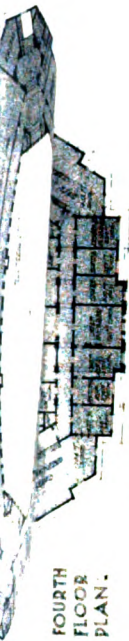


The Architect, Aug 16th 1912

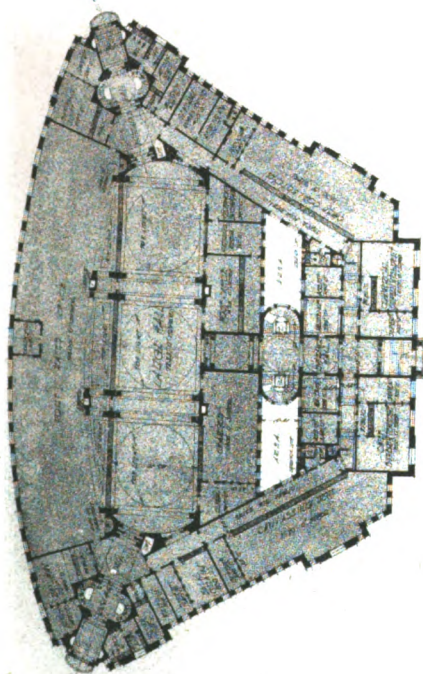




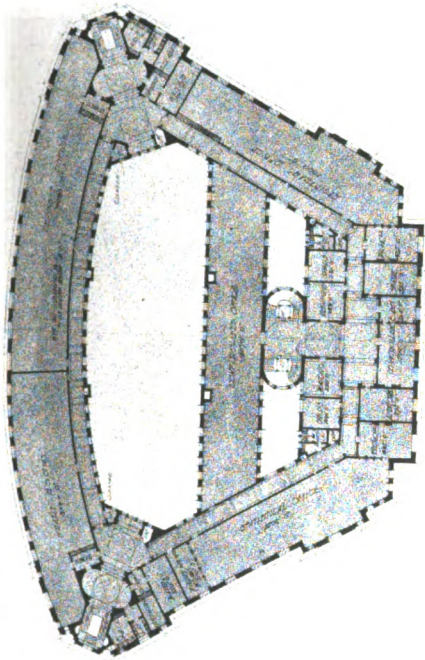
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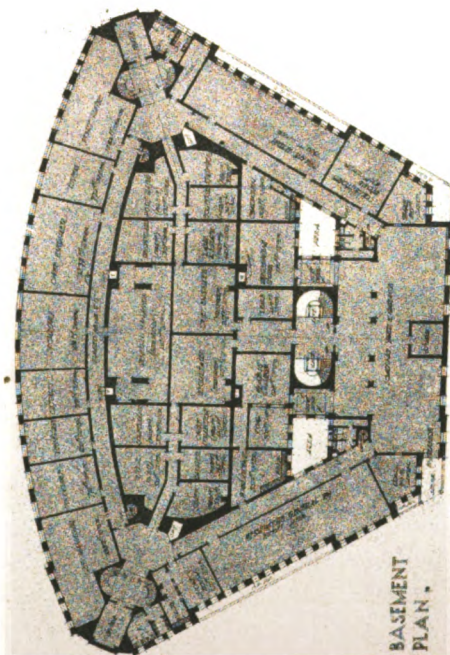
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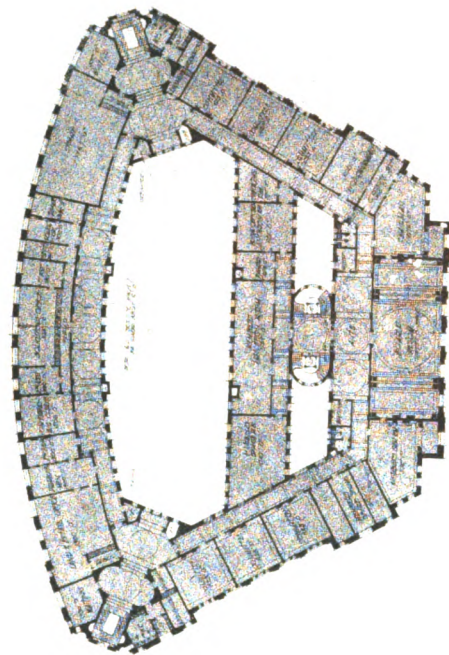
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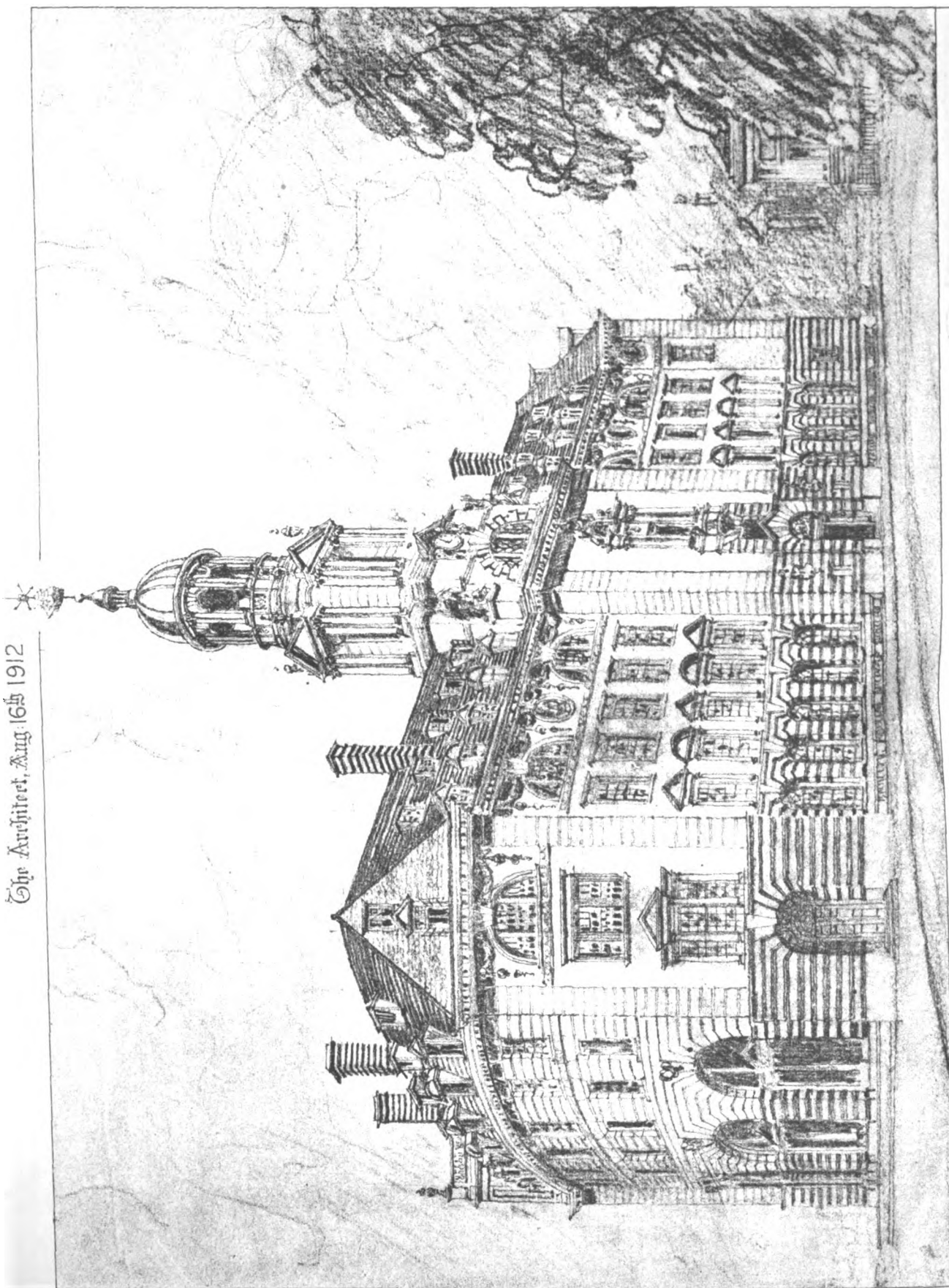
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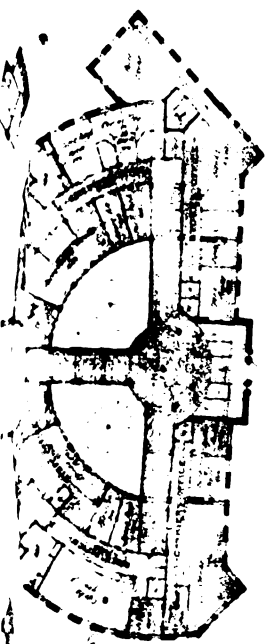
COMPETITION DESIGN FOR THE NEW HEAD OFFICES, PORT OF LONDON AUTHORITY,
By Messrs. P. H. KEYS, A.R.I.B.A. and F. DOWDESWELL, A.R.I.B.A.





The Architect, Aug. 16th 1912

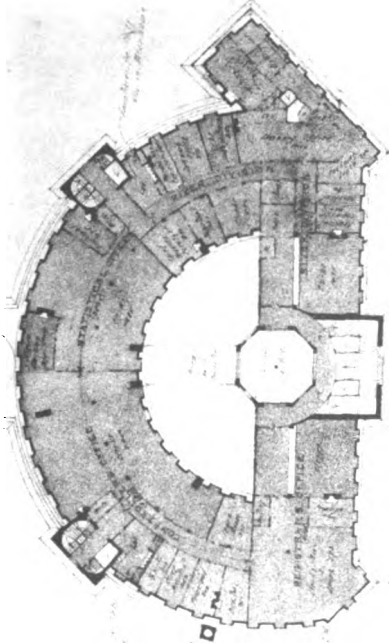
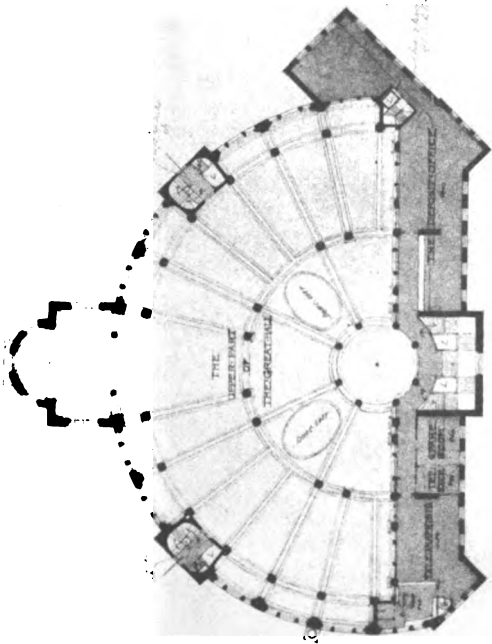




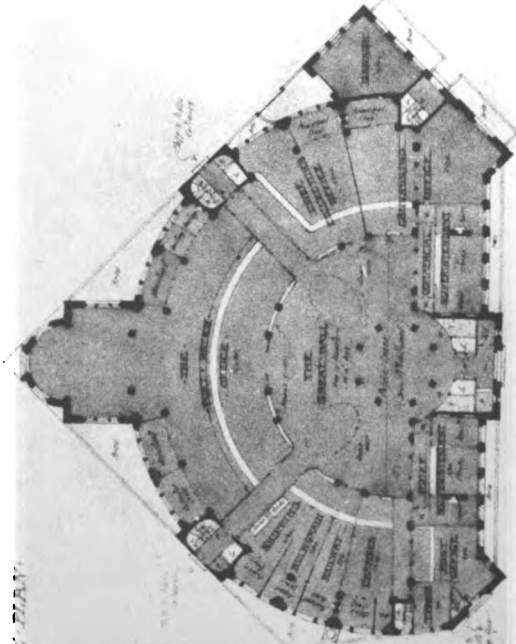
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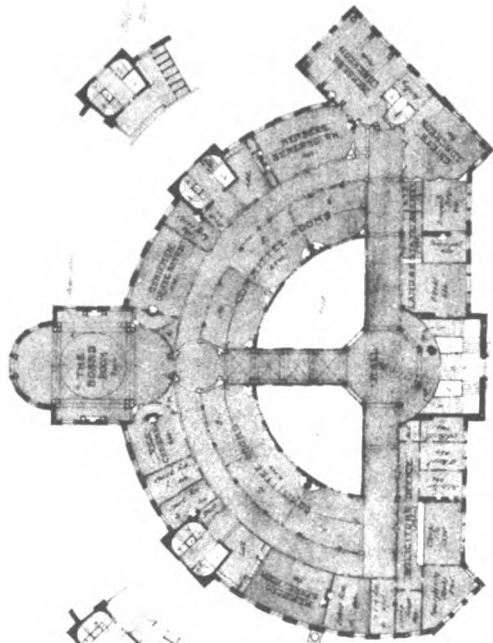
FOURTH FLOOR PLAN (CONTINUOUS ABOVE)



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FIFTH FLOOR PLAN

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COMPETITION DESIGN FOR THE NEW HEAD OFFICES, PORT OF LONDON AUTHORITY.
By Messrs. G. BERKELEY WILLS, A.R.I.B.A. and CECIL BURNS.

Aug. 16,

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GREAT BRIT

By A

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INTERIOR DECORATION.—III.

GREAT BRITAIN.—I.—TRANSITIONAL PERIOD — RENAISSANCE.

By ALBERT E. BULLOCK, A.R.I.B.A.

(Continued from last week.)

THE ceilings of Layer Marney Hall, Essex; Holnaker Manor House, Sussex, and Prebendal House, Exeter (now demolished) are all of wood construction. A combination of wood and plaster exists at Tolleshunt d'Arcy Hall, Essex, and Holcombe Court, Devon.

One of the earliest dated ceilings in London is that of the Chapel Royal, St. James's Palace, which was executed by Hans Holbein in 1540, three years prior to his decease. Mr. C. J. Richardson made a fine coloured drawing of this ceiling, now in the collection at the Victoria and Albert Museum, containing the Latin motto: STET DIEV FELIX: HENRIC. 9 REX. 8—HÆA VIVAT REX. 1540. DIEU ET. MO.—DROIT, &c.

It is one of the earliest examples of coloured ceilings in which wood ribs are used with mitred angles having plaster or papier-maché panels. There are many emblems, the arms being emblazoned in their proper colours. The subject is gilt, and shaded boldly with bistre; the roses glazed with red, the leaves dark green, and the general ground light blue. The mouldings are painted green, and some are gilt. The underside is dark blue, on which is a small open running ornament cast in lead and gilt.

In the Additional MSS. British Museum (5308) there are jewellery designs by Hans Holbein, but little of his other decorative work remains.

There existed a good Elizabethan house in Gravel Lane, Houndsditch, said to have been inhabited by Count Gondomer, the Spanish Ambassador to Queen Elizabeth. Additions were made during the reign of James I. by Robert Shaw, of Southwark, an Alderman and Master of the Vintners' Company, who caused his arms to be put on the ceiling.

Exeter, famous for its ancient work (much of which is now, however, dismantled), contains a building in the Mint, off Fore Street, called St. Nicholas Priory, said to be named after Nicholas, Archbishop of Myra, the capital of Lycia, in Asia Minor, who died A.D. 342. The Priory was founded after the Conquest; the particular Order does not appear to be known. A monk of the name of Gunterus was first Prior, the last being William Cullompton, who was installed in 1523, after which date the early geometrical plaster ceiling would appear to have been formed, and possibly before 1536, when the establishment was suppressed by the Act of Henry VIII. When the buildings came into the hands of the City Council most of the monastery was destroyed for building bridges and other works. The remaining buildings have recently been purchased by the Corporation, and are to be restored and used as the City Museum.

There was at this time a short-lived introduction of renaissance work in Scotland under the auspices of the Royal architect, Sir James Hamilton, the natural son of the Earl of Arran, who went to the Court of Francis I., married a French lady, and came back to rebuild, inter alia, Stirling Castle.

Although he was executed for treason in 1540 Hamilton managed to leave an impression on several buildings, as Falkland Castle and other examples, which subject was recently dealt with by Mr. Laurence Weaver in a lecture given to the Architectural Association, Tufton Street, entitled, "Some Scottish Houses of the Renaissance," from which it appears that very little further renaissance work was executed in Scotland until the advent of Sir William Bruce, except for the work of Inigo Jones, Nicholas Stone, and Matthew Goodricke at Holyrood Palace in 1617, when preparations were made for James I.'s visit.

The hall screen was retained in the planning of the mansion during early renaissance times, and formed an attractive object for the wood-carver. The screen at the Charterhouse, London, is said to be as early as 1537, while the screen at Audley End would be a much later example, as the building was commenced in 1603 and finished by John Thorpe and Bernard Jannsens in 1616.

There is an interesting church screen at St. Mary's, Crocombe, of late fifteenth-century work, which exhibits the typical cresting so familiar a feature upon Elizabethan altar tombs.

Very few names of Elizabethan architects have been handed down to posterity, and in some cases there is considerable vagueness as to the part they played in the erection of the many buildings of which we have record. The first of any importance is John of Padua, who obtained Royal

grants for executing work in 1544 and 1549; then comes the name of Robert Smithson, who was born in 1535, the architect of Wollaton and Hardwick Halls; his son, Huntingdon Smithson, who died in 1648; John Smithson, the son of the last mentioned; and John Thorpe. The latter is perhaps the greatest enigma, and his book of drawings in the Soane Museum is the subject of the shedding of much ink, on account of the conflicting dates mentioned, ranging from 1502 to past 1600. It seems, however, pretty clear that he was more of a surveyor than an architect, and that his part was chiefly to visit the buildings of the nobility and make small additions, except towards the latter years of his life, when he states he laid the first stone of Kirby Hall in Northamptonshire in 1570, the seat of Sir Humphrey Stafford; his additions to Ampthill and his connection with Jannsens at Audley End (or Audley's Inn, which Mr. Laurence Turner considers to be the origin of the title). Thorpe built several smaller residences, such as Longford Castle, 1580, near Salisbury (for Sir Thomas Gorges), which has a triangular plan with circular towers at each apex, the exterior of which is of later date and of bad German type of design, while the interior has been much altered. The panelling in a room in one of the circular towers was painted white with gilt mouldings. The house was once in the possession of Lord Folkestone. Theobalds and Holdenby are also said to be from Thorpe's designs.

He appears to have paid a visit to France in 1600, and to have altered a house in the Faubourg St. Germain, possibly the Luxemburg, when he also seems to have visited the Palace of St. Germain from the note on a plan, "St. Jermins house v. leagues from Paris—1600."

In 1563 was published "The First and Chief Groundes of Architecture," by "Jhon Shute, Paynter and Archytecte."

The last half of the century saw the building of a considerable number of important residences, such as Burghley House, 1553; Morton Old Hall, Cheshire, 1559; Loseley in Surrey, 1562; the Old Hall, Heath, Yorkshire, 1564 (the year of Shakespeare's birth), the Jezebel chimney-piece being a later addition, circa 1620; Longleat (now demolished) in Wiltshire, 1566-78; Buckhurst, Sussex, 1568, for Thomas Sackville, Lord Buckhurst; and Gorhambury, Herts, the same year. Hardwick Hall was in progress from 1567-79, built for Elizabeth, Countess of Shrewsbury.

In the presence chamber at Hardwick there is a deep frieze in painted plaster representing Diana and her nymphs in a forest with hunting subjects, beneath which are hung Flemish tapestries of the sixteenth century. The canopy is modern. The house was designed by Robert Smithson, who was occupied with Wollaton Hall, Nottinghamshire, from 1580-8. He died in 1614. (Mr. Gotch says 1634, but this does not coincide with the description given by Mr. Maurice B. Adams in the R.I.B.A. Journal, March 23, 1907.) His son, Huntingdon Smithson, was sent to Italy by Sir Charles Cavendish, who rebuilt Bolsover in 1613.

Buckhurst Park occupied Thorpe's attentions some time before 1570, the plan being of the central court type, and having a wide terrace running the whole length of the west side. The manor-house was the seat of Sir John Sackville, whose son Richard succeeded him. Thomas Sackville, the first Earl of Dorset, caused the alterations to be made by Thorpe, but lived the latter years of his life till 1608 at Knowle. The house has seen many subsequent changes—namely, in 1739 and in 1830, when Repton rebuilt the greater portion for George John Sackville-West. In more recent years additions to the house and gardens have been made under the sympathetic hands of Mr. Edwin Lutyens for the present owner, Mr. R. H. Benson.

Ampthill was erected in the reign of Henry IV. for Sir J. Cornwall, who died in 1443, and was enlarged by John Thorpe about 1576, probably after he had completed Kirby Hall.

Burleigh House, built for Sir Francis Willoughby, and Theobalds for Sir William Cecil, Lord Burghley, are also the works of John Thorpe. The latter was exchanged by Sir Robert Cecil for Hatfield in 1607 with James I., who died at Theobalds in 1625. The designer of Hatfield House was Robert Limmings, who built Blickling Hall about 1620.

Thorpe was engaged on Holdenby in 1580, the year of the commencement of the works of Montacute, Somerset, which latter has an extraordinarily rich painted treatment to the panelled work, especially the doors of the great hall. The

* This book, of which only five original copies appear to be extant, has recently been reprinted by *Country Life*, with an introduction by Mr. Laurence Weaver.

large chimney-piece is dated 1599, and is a very elaborately carved work.

In 1585 Middleburgh was erected by Robert Adams, an architect and engraver, who does not appear to be very well known. He was born in 1540 and died in 1591.

Westwood Park, Worcestershire, still retains its Elizabethan character, although added to considerably in the following reign. The entrance lodge is a picturesque feature, and the sculptured arms over the entrance arcading is very decoratively treated. The interior contains much well preserved panelled work and some fine Jacobean chimney-pieces and ceilings.

Additions were made to Coombe Abbey about 1589, the estate of Lord Harrington, who was tutor to Princess Elizabeth until 1613.

Beaufort House, Chelsea, was built on the site of Sir Thomas More's residence for Sir Robert Cecil in 1590. The archway which Nicholas Stone erected here in James's reign has been removed to Lord Burlington's villa at Chiswick.

The best-preserved example of Elizabethan work at Exeter is that of the residence of Sir Amyas Bampfylde (Lord Poltimore), which is now in the possession of Messrs. Varwell, Guest & Co., Ltd., who have restored the work. It is a stone-built house of channel shaped plan, having the entrance porch in an internal angle. On the first floor is a fine oak panelled room with a well carved chimney-piece, the overmantel of which contains the Bampfylde coat of arms picked out in colours and gilt. There are two ceilings of the period in a good state of preservation. The windows contain the original stained glass, and incidentally there is preserved in the courtyard a fine lead cistern bearing the date 1727.

Astley Hall, Lancashire, dates about the time the long gallery was added to Powis Castle (1592), which latter has a very curious ceiling and unusual wainscoting with fielded panels. The work is somewhat clumsy in comparison with other current examples, especially the frieze. The ceiling ribs will be noticed in the photograph to interlace alternately along the soffite. The coats of arms and dwarf Ionic columns are emphasised by darker colouring. The panelling in the other photograph here given exhibits a higher grade of finish and is probably later, although there are similar motifs in the ceiling decoration.

The Admiral's Room, Old Mol's Coffee Tavern, in the Close, Exeter, now occupied by Messrs. Worth's Galleries, and the rooms at the *Devon and Exeter Gazette* office, Exeter, would date about this time. The latter example was originally part of the residence of Roger Mallock who was mayor in 1636; the chimney-pieces are chiefly carved and the ceilings of light pattern with applied ornament. A pair of folding doors from the back ground floor room are now in the Victoria and Albert Museum, South Kensington, and like the other small door giving access to the room, they have inlaid veneered panelling. This latter mentioned door has a masonic mark on the carving of the door head.

(To be continued.)

ON THE MODIFICATION OF MODEL BUILDING BY-LAWS.*

I SHALL concern myself mainly with those by-laws that affect building in the country, leaving the vexed matters of road construction and their proper widths as ones rather for the surveyors to deal with.

By-laws are not enacted to check building, but to secure good building. It is a matter of common knowledge that they have failed to secure the latter.

In the country, except for the matter of sewage disposal and the protection of the water supply, one might argue that no building by-laws are requisite.

However, the Local Government Board does not take this view, and has promulgated a series of Model By-laws for rural districts, which are in force throughout nearly half the country: laws which, when once adopted, the District Councils are powerless to abrogate, and which the Local Government Board declines to modify to suit individual requirements. Moreover, the Board enjoins on such local Councils as may be desirous of having building by-laws a further embroidery of restrictions, specifications and demands, till the original purpose of the Model By-laws is quite overlaid by the numberless provisions and safeguards, appropriate for the most part to urban requirements, or to districts that are in the process of becoming urban. And

the local Councils are eager to meet this demand from the Local Government Board, on the ground that it relieves them and their district surveyor from a great deal of responsibility. This anodyne to the conscience is illusive; the enforcing of regulations to their logical extremities, regardless of the local conditions and requirements, results in harshness and absurdities.

Meanwhile, under our present arrangement of local by-laws enforced by our County Councils, a system has grown up of unnecessarily costly building: this, as a vested interest, the Councils are naturally anxious to preserve. Under their own by-laws they have been penalised in their own efforts; they have been made to conform, regardless of suitability, to their own regulations; they have subscribed painfully to a costly ideal of building, and they do not want the competition of a cheaper form of house. That anybody should be enabled to build, subject to sanitary safeguards, but without restriction as regards construction, would appear to them as an intolerable surrender of the restrictions under which they have worked and to which they have submitted.

There is, as I have said, practically no appeal from the decisions of the County Councils. Literally it might appear to be possible, but no individual, at any rate, would be prepared to devote the time and the money to carry up the appeal to the Local Government Board. Their decisions then are virtually final, and confined within the four corners of their by-laws. But these Councils are not agreed as to what they consider to be the principles of health and construction. They are required to define, for example, the minimum height of rooms, and for rooms on the ground floor there is a consensus of opinion that they should be at least 8 feet high. But when you come to rooms in the roof, or partially in the roof, some Councils require that the room shall nowhere be less than 5 feet in height, and 8 feet to the extent of half the superficial area of the floor; whilst others (such as Godalming) are content with 7 feet in height from floor to ceiling to the extent of two-thirds the area of the floor, with a minimum of 4 feet at the sides. On the other hand, Midhurst, for example (in the by-laws dated 1895), requires the ground floor rooms to be 8 feet 6 inches high, the bedrooms 8 feet 6 inches, and the rooms partially or wholly in the roof to be 9 feet for two-thirds the superficial area of the floor. Some Councils seem to insist on the ground floors having boarded floors on joists; others permit what is generally the more satisfactory method of having a concrete floor to which the boards are nailed direct, although this is not contemplated by the Model By-laws.

The provision for space around cottages is shockingly inadequate; it is not nearly sufficient for the disposal of the refuse of the house. It is a minimum that possibly has to be accepted in a congested town, but can never be excusable in a rural district.

The Model By-laws require that "every person who shall erect a new domestic building shall construct in every habitable room" one or more windows, the sum of which shall be equal to one-tenth of the floor area, and that one-half at least "of such window" made to open. This regulation appears to be accepted by all the various local Councils who have adopted by-laws, without question, and also, I think, without due consideration. Adequate light is, of course, essential to every habitable room, but regard must be given to the source of light available for such purpose. No general statement or regulation can meet the case, and to fix a minimum of one-tenth the floor area is absurd. At most you can only say in general terms that ground floor rooms require larger window area than first floor rooms, since their outlook is generally more obstructed by foreground objects; and that not more window area should be provided than is requisite, since windows make the rooms hot in summer and cold in winter, any excess of which is prejudicial to their occupants.

The Model By-laws decline to differentiate between an earth-closet and a privy. The local Councils, as a rule, make the distinction. Some allow an earth-closet within the house; some forbid, and stipulate that it shall be at least 10 feet away. Now, whilst this might in some cases be a valuable precaution to take in poor cottage property, it is an extremely arbitrary interference in the case of superior buildings, for there is no question that a properly managed earth system is more sanitary than a water-borne one.

Again, wastes from baths and sinks are far better dealt with above ground, than being made to travel through pipes to a cesspool, which is to be constructed according to the Model By-laws to be "impervious to liquid." In other words, you arrange a costly system of traps, pipes, and receptacle to enable you to keep your sewage until it is putrid, and then in that state have to bale it out on the

* Abstract of Paper by Mr. Halsey Ricardo, F.R.I.B.A., read at the York Congress of the Royal Sanitary Institute.

ground; whereas, if it is to go there, it is better to put it there before it goes bad. The truth is, we waste too much water in our present sewage arrangements, and where especially, the amount of ground is limited, we ought to use the dry-earth system more. And to meet the objection that this system is so often abused, I would advocate that all country village schools should be provided with earth-closets, and that it should be part of the curriculum of school teaching that the children should be taught how to use those closets, how to keep them sweet and clean, how to deal with the charged soil in the school gardens, and the why and wherefore of the whole matter. A neglected earth-closet is a repulsive affair, and there is a specious cleanliness in a flush of water down a pan, but the price paid for this panacea is a heavy one. The provision of a water supply, with its pipes liable to burst in frosty weather, its flushing cisterns not always in working order, traps, ventilation, and anti-syphonage pipes, its underground drain pipes, and the evil insanitary cesspool are all heavy items to put to the other side of the account.

The Model By-laws are wise in insisting on dry walls, and leaving the builder in other respects unfettered as to size, material, position, strength, &c. But the county councils, in their local by-laws, have refined on this and have gone into great particularity in their requirements and specifications on all those heads. Their regulations ignore, or boycott, local methods and tradition; they refuse to permit timber construction and, apparently, the erection of mud or clunch walls, and they rule thatch out of court as a roof covering. Now, timber construction, in some districts, is a very proper and convenient method of building a house: it can be made perfectly snug and weathertight; it is sufficiently durable and the danger to life from fire is not really a serious one, or really greater than the flimsy erections, permissible under the Model By-laws, of so-called incombustible materials. The same can be said of thatch. As a roof covering it is far superior to slates in respect of comfort: since it keeps the house warm in winter and cool in summer, and one's own experience is that it is rare for a thatched roof to be set on fire. This condition of things is ignored by the local by-laws, and one of the consequences is that the making of mud or chalk walls and the proper thatching of a roof is becoming a lost art, an art too good to lose. Even on the hayrick it is gradually disappearing, since ricks are being heaped under permanent structures with corrugated iron roofs.

I suppose it is a vain thing to ask the county councils to discourage the use of hollow walls above ground. I consider them a faulty construction, leading to all sorts of subsequent disasters. Their sole excuse, that I know of, is that the outer skin, being separated by a cavity from the inner, protects the latter in case of severe stress of weather from the rain and damp. This is valid in theory, but the theory is largely stultified in general practice. The by-laws should insist on two damp courses where hollow walls are being used, one at the bottom of the cavity, and one to the inner wall some three inches above this wide damp course, otherwise the wet passing through the outer skin collects at the bottom and is sucked up by the inner skin. Not only ought there to be this second damp course, but there should also be a cement or damp-proof rendering made, weathered to a sharp slope, so that the water that has penetrated into the cavity runs at once away from the inner wall and accumulates against the outer; without this precaution, the hollow system is no remedy against damp walls.

But it is far better, and not much more expensive, to build the walls solid, and jacket them with a waterproof outer coat of cement stucco or rough cast. The evils of hollow walls are many. You have a space, if unventilated, full of damp air, in which the ends of your timbers are rotting away. Seeing that your floor joists rest probably on a wood plate (tarred or sanded hoop iron meet this difficulty better) when this decays, the ends of the joists, also partially decayed, drop down some three inches or more on to the brickwork. If the space is ventilated, it becomes the sanctuary and playground for vermin. This open space, under any conditions, is a conductor of sound throughout the building. The system is bad in construction because the main weight of the roof and the floors comes on the inner wall, which in consequence settles down at a different ratio to the outer, almost unweighted, wall. If the ties are of iron (and even when galvanised they rust under their unfavourable conditions), they meet the strain by bending, and such water as lodges on them drains in consequence towards the inner wall; if the ties are made of stoneware or terra cotta,

not being able to bend, they get fractured. I do not know the reason, but there seems to be a general agreement that the cavity must not exceed two-and-a-half inches. It would be just as easy to build the walls with a five-inch cavity, and less chance of the effect of the void being neutralised by chance lumps of mortar resting on the ties and bridging over the cavity. Moreover, pipes, waste and others, have a way of going wrong as they pass from inner to outer walls, and the hollow space has been known to get filled with foul water and sewage, and as the warmer air of the rooms, and the open fires, act as a pump, the bulk of these effluents were sucked into the inner wall.

If the councils are going to insist on minutiae of construction, as they do when they specify the scantlings of roof timbers and floor joists, and their distance away from smoke flues, they should carry their insistence still further: they should require that the walls over the mantelpiece and at the sides of the chimney breasts should be nine inches thick where the flues occur; that the external faces of the chimney stacks, where they emerge from the roof, should be at least nine inches thick; that all skirtings should preferably be in cement, and where the question of cost may render this impracticable, the plaster must be carried down behind the wooden skirtings flush with their backs. In the usual building methods, the space left affords a run for vermin, and in case of fire adds materially to its power of spreading, where plastered wood partitions occur. This open communication between two rooms, or passages and rooms, carries the fire from one part to the other, and feeds it with the necessary air supply. The councils' by-laws generally specify the scantlings of the roof rafters and floor joists, in several cases regardless of what the nature of the wood to be used may be. It would be better, if they must be so particular, to content themselves with specifying the sectional area: but why do so at all? As it is, by prescribing the minimum (which is really too little for inferior timber) the by-laws set a kind of standard, both in masonry and carpentry, so that any architect who exceeds the minimum is held by his client to have committed an extravagance.

On the other hand, by insisting on footings to every wall, where concrete foundations are supplied, they create in many cases an expensive obstruction of no constructional value. If the concrete is thick enough, the walls may just as well rise from it their natural thickness, and it is often cheaper to build the walls in concrete, below the ground level, than in masonry or brickwork. The footings take up a lot of valuable floor space, and are a permanent nuisance. My conclusion then is that, though the Model By-laws issued by the Local Government Board for rural districts require amending in the article of window area, and bringing up to date in the matter of its provisions for the drainage and sanitation of buildings, they are in the main sufficient; and if they had been accepted by the county councils without any glossary, there would not have been this dissatisfaction and outcry. It is true it would have made the position of the district surveyor more responsible, but their relief from responsibility is not a wholesome element, and it leads in many cases to hardship and absurdities. And with all these doctrinaire prescriptions and restrictions, shoddy buildings are being erected all over the country, which, I believe, would be at most impossible if the surveyors had a freer hand in their examination of the plans submitted for proposed buildings.

There is a proposal at this moment before Parliament that a person or persons should be able to appeal to the Local Government Board for special relaxation of the stringency of local by-laws, and the Government are giving the matter their attention.

The temporary housing of a suddenly increased population in a rural district, owing to some large estate developments (road and bridge engineering, extensive buildings and the like) where the influx of workmen is for a time merely, and their houses (at least not all of them) are not required after their withdrawal, has not been considered by the Model By-laws, nor to my knowledge by the county councils' by-laws. But that some form of temporary construction should be permissible is obvious, seeing that with the increased facilities of travel of late years labour may be regarded as more fluid than formerly. The question of providing housing for transitory labour has become an important one, and the problem of erecting cheap temporary buildings, both dry and sanitary, has an especial interest.

It is possible, by asking for too much in the way of requirements, not only to hinder building (the last thing we desire) but also to bring about a neglect of sanitary laws,

by evasion and the lack of the support of public opinion, and this is especially the case where the evils are supposed to be merely temporary and, so to speak, accidental.

Mr. H. D. Searles-Wood, F.R.I.B.A., communicated the following notes on the paper:—The Model By-laws issued by the Local Government Board for use in rural districts only deal with (a) structure of walls and foundations for the purposes of health, and not of stability, and (b) sanitary matters. Even if the by-laws had not secured good buildings they had checked bad buildings, and this was their main object. There are no fire-prevention clauses in the rural Model By-laws. The Public Health Act has a far wider scope than the author indicates, and in the matter of streets and buildings the principal object is to protect the public. District Councils are not powerless to abrogate their by-laws. The Local Government Board does not decline to modify by-laws to suit individual requirements, as seen in the circular letter of January 5, 1906. The Local Government Board do not enjoin unnecessary restrictions, specifications, and demands on local authorities. With regard to the statement that "the local Councils are eager to meet this demand from the Local Government Board," there is no demand from the Local Government Board. County Councils have no power to make by-laws. There are no restrictions as regards construction in rural Model By-laws. There is no power of appeal to the Local Government Board, and the Local Government Board have no power to give a decision. A magistrate's decision is final unless carried to a higher Court. The Local Government Board are, however, very frequently appealed to, and have secured modification in numerous cases in consequence. Councils are not required to define minimum height of rooms; it is purely optional. The clauses relating to height of rooms in the Midhurst by-laws were repealed in 1902, and another by-law substituted requiring 8 feet and 9 feet for superficial area of floor. Solid floors are provided for in Model By-laws. It would be inconsistent for "purposes of health" to require a larger area of space round cottages in rural than in any other district. The fault, if any, is in the Act. With regard to the requirements of one or more windows, the sum of which shall be equal to one-tenth of the floor area, that is not excessive under any circumstances. Too much is better than too little. The fashion of small windows is largely disappearing. The Model By-laws (urban) allow an earth-closet within a building, and differentiate between the earth-closets and privies. There is no power to enforce the use of moveable receptacles or of earth. A distance of 10 feet for privies from a house is not a hardship. It would obviously be undesirable to allow open drains in small backyards or cesspools. There is no power under the Act to make by-laws as to water supply, and hence their omission. The Public Health Act gives sufficient power to prevent the occupation of houses without a proper water supply. There is nothing in the rural Model By-laws to prevent timber buildings being erected, or the use of thatch. It is impossible to prohibit the use of hollow walls. With regard to the suggestion that the Councils should require walls where the flues occur, &c., to be 9 inches thick, this would rather add to cost of cottage building. The by-laws always define the timber from which scantlings are given. The sectional area is not a sufficient method. The strength varies according to depth and width. There are no clauses as to footings in rural Model By-laws. Footings are not prescribed to be of brickwork, and might be of concrete. The by-laws require only four inches of concrete under buildings, which is hardly sufficient to carry a heavy wall. There are clauses specially prepared to deal with housing provided for transitory labour, and local authorities have power under the Public Health Act, 1907, to licence temporary buildings for this and other purposes.

Mr. Lacey (Oswestry) said the communication of Mr. Searles-Wood had practically cut the ground from under other people's feet in attempting to criticise the paper. There was no doubt this was a very difficult subject, and one could agree that a remodelling of the by-laws, both as to urban and rural districts, might be advisable. There was no doubt that there were things in the by-laws in many districts which were not up-to-date with present methods of construction. Unquestionably, rural conditions should be more taken into account than they had been. It was within his knowledge that the by-laws in some rural districts were even more stringent than those in the urban districts adjoining them, and there was no sense or reason in that. Mr. Ricardo seemed to think that it would be sufficient to have some very generalised treatment, and to leave a good deal of detail to the architect and builder; but he was afraid that would

produce considerable difficulties in administration. There must be laws of control, and there must be obedience to them, for without obedience to the law they would have a state of anarchy. As to the question of a cheaper mode of construction that was an important point, in view of the enhanced price of materials. It might be advisable to cheapen construction, but a cheaper class of building would entail more for maintenance; and perhaps the old adage that the best was the cheapest in the end would apply in this case. There were, no doubt, many inconsistencies in the by-laws, and these should be removed where necessary; but these could only be ascertained by investigation. There must be a minimum fixed, and the danger was that it might be fixed too low. What was put as the minimum was too often regarded by people as the maximum, and they did not set themselves to go beyond the actual requirements of the law. He considered particularly that the by-laws with regard to the air-space about buildings required to be remodelled. He held that where there was not sufficient development to warrant the preparation of town-planning schemes, great good might be attained if the Model By-laws were framed so that a greater amount of air-space should be given at the rear or the side of houses in urban districts than was the case at present. His contention was that houses should not be permitted to be built in long rows of fifty or sixty without a break for the circulation of air. With reference to the concluding paragraph in the paper as to the asking of too much causing danger of a neglect of sanitary laws, he was afraid that by asking for too little the evil would be greater.

Mr. W. B. Pindar (Rural District Councils Association) said the author appeared to have an extremely hazy idea as to the authorities charged with the administration of the by-laws in rural districts. He took it that the author's complaint was not so much against the Model By-laws of the Local Government Board as against the by-laws adopted in particular rural districts, which were considerably more stringent than the Model By-laws. It was a treat to him to attend a meeting where the Rural District Council was given the credit for being somewhat in advance of its statutory requirements, because the complaint generally was that they were behind the times and very slack. With regard to the air-space about cottages, they ought to keep clearly in their minds what the object of land being attached to a cottage was. It was not for the disposal of refuse, but simply to secure free ventilation and light to the building. There was no power, so far as he knew, to make any by-law to provide land for the disposal of refuse, and the proper remedy was to enforce the clauses of the Public Health Act, which empowered the Local Government Board to call on the local authority to undertake the disposal of refuse. As to water supply, that was dealt with under the Public Health Act, and it was illegal to occupy any cottage erected since that date in a rural district unless there was a sufficient and adequate supply of water available for the inmates of the dwelling. He thought that the effect of the by-laws in restricting building operations had been grossly exaggerated. There were at present something like 200 rural districts in England and Wales where there were no building by-laws at all, and he had heard that there was a greater dearth of dwellings in those districts than there was in the districts where stringent by-laws were enforced. If that was so, it seemed to him there was no real basis for the complaint that the by-laws in rural districts prevented the erection of cottages. In these districts architects would have an entirely free hand and a wide field for experiment, and there was nothing to prevent them experimenting in their own materials and according to their own design.

Dr. Tempest Anderson (York) said they were suffering very much at the present time from an epidemic of grandmotherly legislation, and if they went on as they were doing they would soon have to apply to the sanitary authority for leave to blow their noses. Someone had said there ought to be rigid powers to prevent the disposal of refuse about a house, but that he absolutely disagreed with. When he was in practice he attended farmers who lived with the fields around them heavily manured, and the same thing was the case with market gardeners; and yet they were the most healthy class of the community. When plans were being laid out for the building of a village, it was utterly absurd to spend enormous sums of money in putting down expensive and often abortive schemes for carrying the sewage to be disposed of at a sewage farm miles away. If they had a place in the country where they could dispose of the manure round about the house, and by that means convert it into wholesome vegetables, they would be conferring a great benefit on the community at large. In his opinion, the utter waste of manure was one of the greatest national dangers

at the present time. They went on exhausting the land, and took the manure which ought to go back to the land, and by septic tank treatment rendered it incapable of being used on the land. That being so, it was absurd to enforce on rural districts by-laws which might be necessary in the big cities, and which, by the way, had been made generally by public officials living in London who had never seen a farm.

Mr. Munce (Belfast) said that from what had been said that morning one would think the Local Government Board were a set of fools. Instead of crying out at Conference after Conference about the by-laws, why did they not first agree as to the by-laws they were satisfied with, and then discuss the others? The fault lay with the local authorities and their advisers. Instead of coming there and grumbling, engineers and surveyors should explain the whole thing to their Councils, and if they objected to anything and went quietly to the Local Government Board they would find they would be listened to. In Ireland, if they had anything to discuss, they discussed it with the officers of the Local Government Board by arrangement, and showed their reasons for wishing to take a particular course; and they always found the officials most courteous to them. If they sent for a copy of the Model By-laws they would find a space reserved for the making of notes. Why, then, did they not make notes and send them to the Local Government Board? His opinion was that the bulk of them were not able to amend the by-laws.

Mr. Cresswell (Carshalton) said from a perusal of the paper it would seem as if they wished to go back to the Dark Ages. They seemed to forget that the Local Government Board did not force these by-laws on them. They simply issued the Model By-laws, and each local authority had its remedy. It was the bounden duty of the local authority to consider the local circumstances, and each authority had the right to make its own by-laws modelled on those submitted by the Local Government Board and approved by the Local Government Board. Speaking as an architect, he would at once say he would be very sorry to think that any brother architect would endeavour to go under the existing by-laws. If he was worth his salt he would endeavour to go above them, and he had always found that architects did go above them. He had always held that hollow walls were not nearly so good as solid walls. It was a very good thing that a minimum was put in with regard to windows, but he felt that architects would be doing a very bad thing if they got anywhere near the minimum, as it was not sufficient. He agreed with the author as regarded cesspools. He had had a curious experience of adjoining rural districts. In one he had been allowed to put a cesspool with open joints, whilst a few yards away, in another district, he had had to deal with it as described in the paper. It seemed to him that the rural districts should come into line. A good deal was said about utilising timber, but a day or two ago a great authority said that they ought to be wary about using timber, as it was not so sanitary.

Mr. Ricardo, in reply, said he was glad the paper had produced so much discussion. He agreed with Dr. Anderson about keeping the manure in the country. In a rural district they had fields all around them. Where they had sewage enclosed in pipes, unless they were kept in efficient order it meant sewer-gas getting into the houses. They could take things into the open air and not even bury them, and they remained sweet. If the whole country would accept the Model By-laws, subject to bringing them up to date as regarded sewage, and subject to their being a little more reasonable about window space, that ought to be enough. After that, when plans were presented, the local authorities should take on themselves the responsibility of saying they were not adequate if they thought so. It was the taking away of responsibility by putting things into the by-laws which did the harm.

MODERN ETCHINGS AT THE DOWDESWELL GALLERIES.

REPRESENTATIVE original etchings, the work of fifteen artists, are now on exhibition at these galleries, and there are very many really interesting amongst them. Mr. Mortimer Menpes, R.E., would serve by himself to provide a show well worthy of repeated visits; there are twenty-six of his works on view, and it would take less time to schedule such as did not prove of great attraction than to deal with the criticism from the opposite standpoint. A few alone can be selected for notice here. The view in the "Interior of St. Maclou, Rouen," could not be treated more effectively; the light enters from the rear windows and enhances the darkness of the vaulted roof and the cast-shadowed floor. "Windmill

near Barnet" is charming, the light in the sky being effectively shown as reflected in the water. We should consider "The Great Door, Rouen Cathedral," as all that is satisfactory and delightful had there been a little massing of the detail, but as it is there is a slight air of thinness about it. "Cottage, Batsworth Heath," is a perfect landscape; "A Bridge at Srinigar" and "The Bridge of Sighs" are poems, and this is a not uncommon characteristic of Mr. Menpes' work; in the former the mingling of light and half-light is most telling, and the latter is a gem. This, too, may be said of "A Cottage at West Hendred." Other works of this artist must be regretfully passed over in order to pay heed to the exhibits elsewhere.

Mr. Albany Howarth is represented by fifty-one sketches, and with but few exceptions these are good. He is strong on chiaroscuro and can portray atmosphere satisfactorily. "View of Durham" and "Interior of Durham Cathedral" are both excellent in their several styles; in the latter the ornament is suggestively touched in, and the light projected downwards from the unseen "lantern" into the body of the fane is very effective. "Château Gaillard" and "Le Pont des Andelys, Château Gaillard," are poetic in feeling, and this, too, may be said of the mezzotint "Marble Bridge, Copenhagen." "Gourock" is a perfect sketch of a landscape, and "The Blue Mosque, Cairo," gives quite the local essence. Mr. Howarth's Oxford and Cambridge studies must be relegated to a secondary position, though this does not imply that many of them are not good. If we say that some of this artist's work is reminiscent of Mr. Herbert Railton it is assuredly complimentary.

The work of Mr. Ernest Lumsden, A.R.E., does not prove to be inspiring and has the misfortune of being placed between the vigorous technique of Messrs. Menpes and Howarth. Doubtless Mr. Lumsden's works will have their admirers, however. "Seoul, West Gate," is exceptional in merit; and "Les Halles" and "The Great Wall, Shanhai Kwan," must also be selected for favourable notice. Mr. A. P. Thomson is represented by some good work, especially in his Rothenburg sketches; and his "Portuguese Nocturne" is excellent. Of the work of other artists represented, mention may be made of Mr. Arthur Turrell's "Entrance to Duomo, Florence," as being very good and well drawn; it holds a satisfactory medium position between hardness and woolliness. Mr. J. A. Brewer's "Rouen Cathedral from the East" is also very good. Mr. Percy Robertson in "Parliament Square, Westminster," "Victoria Embankment," and "Scarborough Sands" has some pretty little sketches. Mr. Frank Mason's "A Link with the Past" and "The Harbour Light" are good, though the technique is not interesting. The Hon. Walter James, A.R.E., has in "Moorland" a work that is good of its kind, and Mr. Hamilton Mackenzie, R.W.S., A.R.E., has also a good sketch in "Fenwick Church."

THE BRITISH MUSEUM.

ACCORDING to the annual "return" of the British Museum the total number of visitors to the Museum in Bloomsbury in 1911 was 723,571, a decrease of 16,266 in comparison with 1910. The decrease is more than accounted for by the excessive heat of July and August, which discouraged visitors to the extent of nearly 26,000, in comparison with the previous year. The total for weekdays was 659,786 (a falling off of about 10,000), and for Sundays 63,785 (a falling off of about 6,000).

The number of visits by readers to the Reading Room was 223,404, an increase of over 4,000 on the figures for 1910, but still below the totals for 1904 and 1908. The daily average was 745, and the total number of volumes supplied during the year was just under a million and a half, exclusive of the twenty thousand volumes to which readers have free access in the Reading Room itself.

The visits of students to other departments of the Museum amounted to 37,911, an increase of nearly 1,500 on the previous year, and the highest total yet recorded. There were increases in every department except those of British and mediæval antiquities and coins and medals. In particular, there was again a marked increase in the number of students engaged in copying in the Sculpture Galleries.

Progress has been made in the British Museum Extension Building, which should be handed over by the contractor in the course of 1912. Plans for the internal furniture and fittings have been prepared.

Only a small section of the work of reconstructing the roof with fire-resisting partitions was completed during 1911. The usual work of renovation and repair, within

and without the building, was carried out; but it was again found necessary to postpone the re-decoration of the Mausoleum Room.

The chief special exhibition held during last year was that in connection with the celebration of the Tercentenary of the Authorised Version of the English Bible.

A new departure was made during 1911 by the engagement of an official guide to conduct parties round the Museum and to point out and explain the most interesting objects. The experiment was tried provisionally for the six months from May to October, and, having proved very successful, was placed on a permanent footing in December. The guide makes two regular tours each day, taking different parts of the Museum in accordance with a printed timetable; and he is also at liberty to take round special parties by arrangement at other hours. No charge is made to the public in either case. It is impossible to give exact figures of the number of persons accompanying the guide, since the parties usually grow during the progress of the lecture; but it was estimated that not less than 9,000 persons availed themselves of his services during the six months of the provisional institution of the service. There is ample evidence to show that the public greatly appreciate the assistance thus given to them.

During the year excavations were conducted on behalf of the Museum at Jerablus, on the Euphrates, the site of the ancient Hittite town of Carchemish. Sculptures and inscriptions of considerable interest were found, together with a large amount of pottery, which will be of great assistance in fixing the dates of other Hittite sites. The excavations, which promise to be of considerable importance for ancient history, are being continued in 1912.

In the Department of Egyptian and Assyrian Antiquities one of the most interesting additions has been a quartzite sandstone seated figure of Sen-Mut, scribe and architect who flourished at Thebes under the reign of Hatshepsut, Queen of Egypt, about B.C. 1550. It is considered to be a very fine work, and a fine example of the best class of commemorative statues. Sen-Mut was the builder of the temple "Tcheser-Tcheseru" (i.e. "Most Holy"), at Dér al-Bahari.

Another addition is a hard brown stone figure of Pes-shu-per, an official of very high rank, who flourished at Thebes under the reign of one of the Queens Amenartas, about B.C. 630. He was employed in carrying out the restorations of temples at Thebes, and was a temple functionary of great importance. This figure is valuable artistically because of its archaistic characteristics. This, as also the one already mentioned, was discovered at Thebes. An interesting group of Coptic sculptured gravestones and architectural fragments has been brought from the ruins of the famous Monastery of Saint Jeremiah at Sakkârah, which has been excavated during the last few years by the Egyptian Government. They all belong to the period which lies between 700 and 1100 A.D. and they illustrate Coptic funerary Art in one of its most interesting forms, and show the influence of Byzantine artists and sculptors.

The Department of Greek and Roman Antiquities has been unusually fortunate, having obtained at least three accessions which may be counted as of first-rate importance. One of these is a very fine sepulchral relief of the fourth century B.C., of exceptional size, from Attica, which (with the somewhat smaller example acquired in 1910) greatly strengthens the collections of the Museum in this class of sculpture. Another is a bronze head, probably of the Emperor Augustus, of more than life size, with eyes inlaid with glass and alabaster, which was discovered on the site of the ancient Meroë, in Nubia, during the excavations conducted by Professor Garstang on behalf of the Liverpool University Sudan Excavations Committee. The Committee generously allowed the head to be acquired by the Museum at a sum considerably below its probable market value, and this sum was provided by the liberality of the National Art-Collections Fund, which has proved itself this year, as often previously, a most valuable and enlightened benefactor of the Museum. The third important acquisition of the Department is a bronze chariot of the sixth century B.C., found near Orvieto and now restored on a modern core of wood; an object of a very rare class, in a good state of preservation.

The Department of British and Mediæval Antiquities has, as so often before, owed a very large number of its accessions, including some of the most important, to the generosity of private benefactors. A beautiful set of late fifteenth-century church plate from the Hospital de la Vera Cruz, near Burgos, in Spain, was presented by Mr.

J. Pierpont Morgan. A very important collection of Late-Keltic antiquities, of about the first century B.C., found at Welwyn, Herts, and acquired by the late Mr. G. E. Dering, was presented by his daughter. These bronzes are nearly all of Italian origin, probably made at Capua, and include fragments of a *patella* of frying-pan form, two jugs and the mounts of a tankard all closely resembling those found at Aylesford, Kent; and in addition a pair of silver cups. An iron frame of oblong plan with four broad uprights ornamented with twisted columns, and three large fire-dogs with bull's-head terminals are of native work, as are also the pear-shaped "pedestal" urns and other pottery vessels, some of which were in separate burials after cremation and others in two large vaults which contained the iron and bronze objects. All date from about the middle of the first century B.C., and may be referred to the Belgic population.

The Director and Principal Librarian in his introductory statement draws attention to the large proportion of the principal acquisitions of the year which is due to the munificence of private benefactors. It would be impossible, he says, for the Museum to maintain the position which general opinion, both at home and abroad, assigns to it, if the purchase grant voted by Parliament were not largely supplemented by the enlightened liberality of many benefactors, great and small. The number of desirable objects which come into the market annually is so large, and the money value of the more important specimens has risen so greatly, that no Parliamentary grant could be expected to suffice to meet all demands; and it is therefore all the more satisfactory to recognise that private individuals, rich and poor, are more and more recognising the claims of this form of national service.

OUR CONTEMPORARIES FROM OVERSEAS.

The American Architect (New York) has recently included designs for a number of country houses, a theatre at Detroit, a banking building at Sacramento, and a church at Cleveland.

The Architect, formerly *The New York Architect* (New York) illustrates the Bankers' Trust Company building, New York, in its customary admirable fashion.

Der Architekt (Vienna) has some interesting examples of domestic architecture from town and country, and the usual productions of the "new-art" school.

The Architectural Record (New York) has an interesting illustrated article on the sculptures of Charles Keck, and another on the château and gardens of La Granja, on the northern slope of the Guadarrama mountains.

Arkitektur og Dekorativ Kunst (Christiania) gives a good epitome of modern Norwegian architecture from the exhibition of the Christiania Architects' Society, with illustrations.

Berliner Architekturwelt (Berlin) reproduces several exhibits from the Berlin Art Exhibition of this year, and these with the premises of the German Land Bank at Berlin, and some examples of domestic work, make up the staple of the current issue.

Construction (Toronto) illustrates the Quebec Bank, Toronto; the Toronto General Trusts Corporation's building, and the prize competition designs for the new Technical School, Toronto.

La Construction Moderne (Paris) has an article on the museum of Maisons-Laffitte, with good illustrations of some of François Mansart's work.

Deutsche Bauzeitung (Berlin) illustrates and describes competition designs for a town-planning scheme for Düsseldorf, and has a series of articles on the French mediæval fortifications of the Loire and the Rhone.

Het Huis (Amsterdam) concludes its series of articles on Old Zwolle, and deals also with the West Friesland Museum at Hoor, and the convent of St. Catharinadal at Oosterhout, all the articles being illustrated.

Moderne Bauformen (Stuttgart) has for its principal item the work of Herr Hermann Billing, of Karlsruhe, the remainder of the number being occupied chiefly with good interior architecture, mostly domestic.

The Pacific Coast Architect (Portland, Oregon) illustrates an auditorium at Oakland, California, the county museum building, Los Angeles, and a collection of western State domestic work.

The Western Architect (Minneapolis) has illustrations of the Central High School, St. Paul, Minnesota; the Deseret Gymnasium, Salt Lake City; the amphitheatre of the Minnesota State Fair Association; the Hoge building, Seattle; the Columbia County Club, and some private residences.

The Architect.

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FORTHCOMING EVENTS.

- Saturday, August 31.*
The Institute of Sanitary Engineers : Visit to Leighton Buzzard, Linslade Urban District Council Pumping Station, and Ascott House.
- Monday, September 2.*
Northern Architectural Association : Students' Sketching Club.
- Wednesday, September 4.*
British Association Annual Meeting, Dundee (September 4-11).
- Saturday, September 7.*
Architectural Association Camera, Sketch, and Debate Club : Walking Expedition, start at Dorking.
The Institute of Sanitary Engineers : Visit to Central London Railway Power Station, Shepherd's Bush.

THE CHURCH AND TOWN PLANNING.

In a recent number of *The Guardian* Canon S. A. Barnett voices a "Plea for Large Churches as the Church of England's Contribution to the Town-planning Movement" that is now one of the leading features of social advancement. With the experience of a vicar for thirty years of a district church in East London, Canon Barnett is depressed by the meanness of the development of the town and the meanness of the churches that accompany it. Long, straight ranks of small houses, each exactly like a hundred others, lead to the dwarfing of minds and souls. The community is awakening to the imperative necessity for the efficiency and happiness of the citizens, that the city shall be convenient, healthy, and beautiful. Canon Barnett would have the Church assist in the endeavour to supply this necessity by erecting churches that should set a high ideal before the eyes of those who build the dwellings of the people, that would attract worshippers and assist them to a reverent mind and attitude. Thus, he urges, the Church might help town planning, as it might help every other social reform, by charging the atmosphere of life with unselfish and sympathetic thought.

The Canon points out that the policy of the Church, in the diocese of London, is and has been to build as many churches as possible, "buildings of conventional character, showing in their mean lines and sterile decoration the trail of an order limiting their cost to £8,000 or £9,000," and he would have the Bishop of London's Fund, or the authorities who direct the present building policy of the Church, change their method of procedure, and by care in the selection of sites and by generous expenditure at the direction of a large-visioned architect do for the growing cities or towns of to-day what the builders of the past did for the cities and towns of their time. His point of view is that one magnificent building, costing £25,000 or £30,000, would attract more worshippers than three cheap buildings of the ordinary type at £8,000 or £9,000 each.

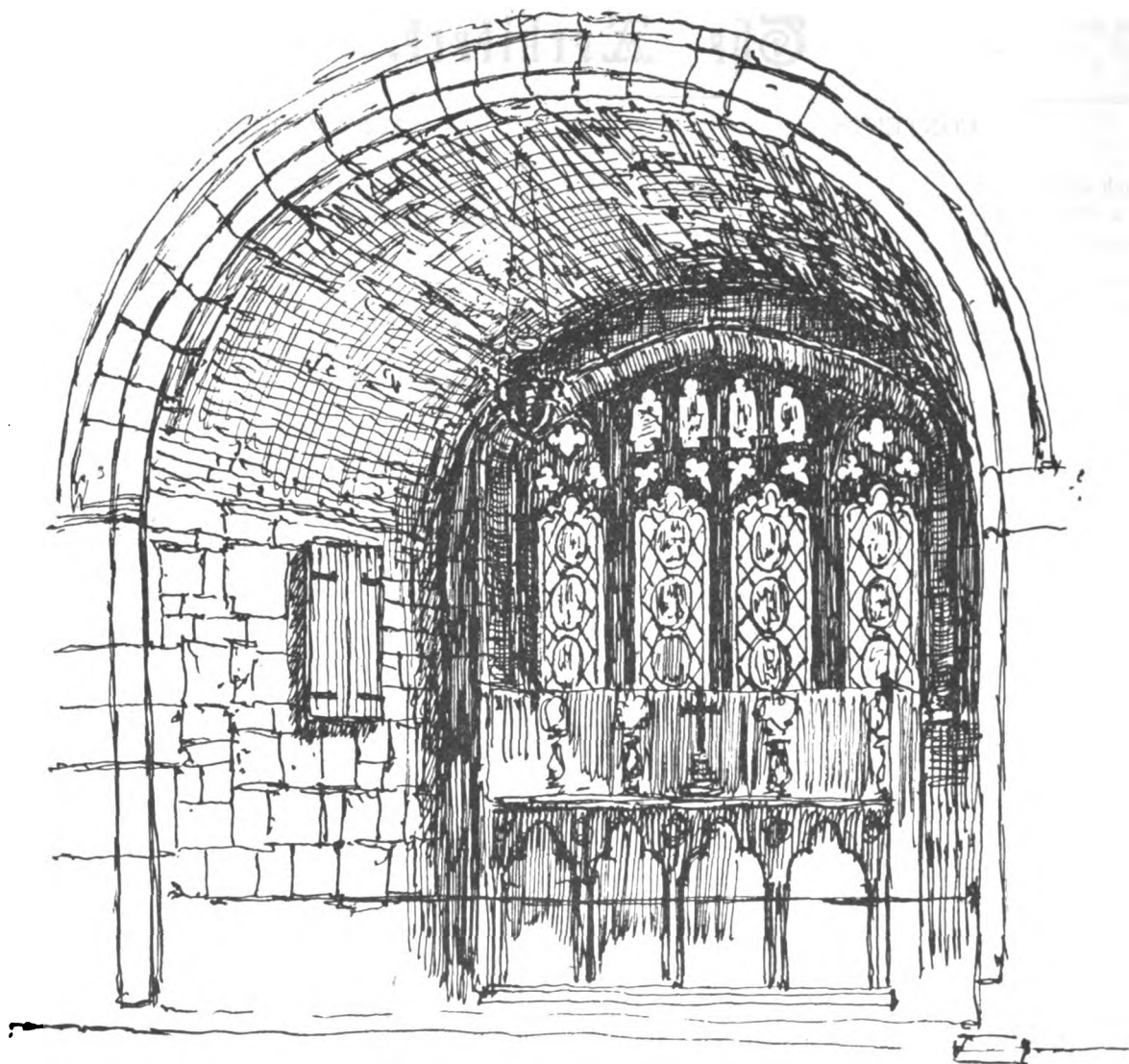
A very difficult question is opened up by the Canon. There can be no doubt that the Church of England, in the diocese of London at any rate, is not prospering. It has lost the hold it had upon the laity thirty or forty years ago. The cause of that loss it is not easy to determine. It has by some been attributed to the growth of the "week-end" habit, and no doubt the two phenomena are to some extent causally connected, but whether the waning popularity of the Church, its churches and its services contributed to the increase of week-ending and, for those who cannot afford week-ends, the abstention from Sunday worship, or whether the stress of modern life has made the week-end an almost imperative necessity and led to the disregard of Church worship we find it

difficult to decide. But, taking into account the amazing popularity of the cinematograph theatre, we are inclined to think that the craving for relaxation might be satisfied, with greater advantage to the higher elements of the people, if the services and the buildings of the Church were more attractive.

Pleasure rather than duty is the motive force of most people at the present day. It is no use telling the twentieth-century man, woman and child that they ought to go to church. They must be persuaded that they would like to go. How they are to be persuaded is the problem for the bishops of the Church to solve. Canon Barnett urges magnificent buildings, each with a large staff of clergy. He would, in short, concentrate, in one establishment, the building, the personnel, and the annual expenditure that are, under the present policy, distributed over three. As the resources of the Church are limited, he would also have to expand his parish to three times its present normal size. Thus, instead of three churches, each costing £8,000 or £9,000 to build, with a staff of one vicar and usually one curate for a population of some five thousand, he would have a £30,000 church with a staff of, say, six clergy for a parish of fifteen thousand.

Now the trouble of the present district churches is, not that they cost only £9,000, but that for that sum they must be planned to accommodate too large a congregation. A beautiful church can be built for £9,000, but not if it has to hold nine hundred or a thousand people. We have had to build some cheap churches ourselves, and we know from experience that it is a heart-breaking task for an architect to attempt to design a dignified church at a cost of £10 to £7 a sitting.

There is another point of view, and we advance it in all candour and friendliness. The parish of five thousand people with its cheap church and its possible stipend does not attract to the priesthood the type of man who is capable of drawing together at the present day a congregation of more than five or six hundred. The average parson of such a parish is not a clerk to his people. Their standard of education and intelligence has risen to a point that requires a cleric of more than average ability and power to take his stand at their head. From this point of view we feel sure there is a great deal to be said for Canon Barnett's ideal. A large staff with an exceptionally able cleric at their head would be able to do the work of a large parish and a large church and would attract and hold the attention and devotion of a large congregation. Whatever architecture can do in the uplifting of the minds and souls of the people would unquestionably be easier of accomplishment by a stately building costing £30,000 than by three mean churches at £10 a sitting. Moreover, the project of a fine and costly building excites enthusiasm, and there are plenty of people who would be proud to participate as donors to the building fund of a



ST. MARY'S CHURCH, SHREWSBURY.

magnificent church who would remain lukewarm or cold when asked to subscribe towards one that is to be cheap and nasty. The architect's enthusiasm also is awakened by the opportunity of designing a building that shall be a credit to himself and his art. We have in mind a recently completed church in the suburbs of London, which with a fine tower and spire has cost £22,000. The parishioners are proud of their church. The money has been raised without much difficulty and there is always a good congregation, so that we have here evidence that Canon Barnett's view is correct and sound.

THE ARCHITECTURAL ASSOCIATION. FORTY-THIRD ANNUAL EXCURSION.— SHREWSBURY.

Illustrated from Sketches by Mr. P. CART DE LA FONTAINE.

THIS year's annual excursion of the Architectural Association has fallen in pleasant places. Shrewsbury is one of the most picturesque old English towns imaginable; full of character, and a place that our veterans have no objection to revisiting, although several members of our party took part in a previous excursion some twenty years ago. We do not propose, for the moment, to go into detail with regard to our headquarters, as this delightful old town is to be visited on Saturday when we have completed the visits to more distant places of interest with which our programme is replete.

First Day, Monday, August 12.

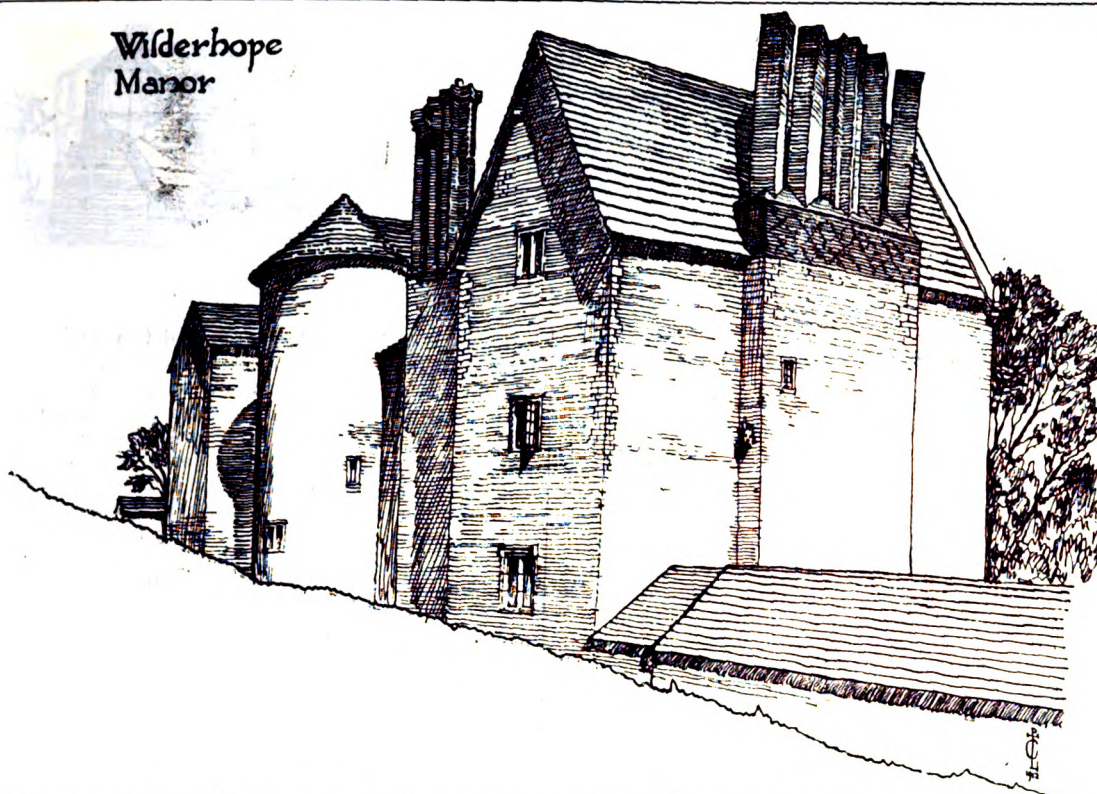
The first building visited (after a devious and unnecessary ride over farm roads) was Albright Hussey Manor Farm, a fragmentary building—part half timber, part brick. This was the moated hall of the Hussey family, but subsequently belonged to the Corbets. The timber-framed portion is earliest, and is richly detailed in the characteristic Shropshire

manner. The brick and stone additions, with large lofty mullioned and transomed windows, date from 1560—about forty years later. There is some typical panelling of 1601 in this portion, and some of the older rooms are also panelled.

Grinshill Manor House, near the quarries, is a plain example of the local manner of building stone houses in the early seventeenth century. It has not the instinctive grace and easy naturalness of the Cotswold type, but is, nevertheless, a pleasant enough style. The unaffected way in which the windows ignore all centre lines in their relations with the gables is notable.

Preston Brockhurst Hall, built by "Mr. Wingfield, of Shrewsbury," who purchased the property from the impoverished Corbets after the Civil War, is a beautiful and complete example of a house in which the Renaissance is really beginning to be felt. It stands on rising ground above the village, and is approached by a walled forecourt with fine gate piers and central steps to a terrace in front of the house. The front is on the E plan, but unequally spaced. The house returned to the ownership of the Corbets in 1743, and possibly to this date may be ascribed the main stair to the first floor and some internal panelling, though it looks earlier. The original stair remains above and below. Traces of garden lay out remain and were measured by some enterprising members. The stable block and other outbuildings to the north of the house are contemporary and good—the former contains its old fittings little altered. At Moreton Corbet chief attention was given to the ruins, partly those of a mediæval castle altered in 1579, and partly an ambitious mansion of about the same date, which remained incomplete at the Civil War and was then ruined. This building presents a south front of about 180 feet in extent of two storeys, adorned with a highly enriched Doric order below and an Ionic order above, both applied in the customary manner of the age. The columns are spaced about 12 feet apart, and the sequence is interrupted at each end and in the centre by lofty mullioned bays surmounted by grotesque ogee gables,

Wilderhope
Manor



while heraldic beasts bearing shields sit upon the parapet above the columns. It is incredible that (as commonly reported) the design should have been brought from Italy by Sir Robert Corbet, but quite possibly he may have brought some Italian workmen. At a short distance northward from the castle lies the church—Norman in its outlines, but with the addition about 1325 of a spacious south aisle separated from the nave by a rather clumsy arcade of three bays. This aisle is known as the Corbet Chapel. There are in the church two altar tombs of members of the family—one late Mediæval, to Robert Corbet and his wife, Elizabeth, and one early Renaissance, both being fully coloured. The tower was built in 1539, and its west doorway shows curious and beautiful detail of a date at which ecclesiastical work is uncommon. The upper stage was added in 1769. On the return journey to Shrewsbury, Battlefield Church was visited. This was originally not a parish church, but a chapel to the College of Priests founded on the battlefield by Henry IV., and was planned accordingly. It was converted for parochial use to supplant the church of Albright Hussey, which had become ruinous. Sketches remain in the church showing its condition in 1853, when the western bays were roofless and a nave and aisles was formed of the east end by the insertion of four Doric columns supporting a barrel ceiling and three narrow span roofs. In 1861 the church was restored by Pountney Smith, in a manner which has evoked some criticism, since the collegiate character was falsified by the establishment of a division both externally and internally between nave and chancel. The chief feature of interest is the occurrence in a church positively dated after 1403 (the year of the battle) of three curvilinear windows with reticulated tracery. Remains showing the extent of the college exist on the south side of the church.

Second Day, Tuesday, August 13.

WROXETER.

Our first halt was at Wroxeter, the Wrekin Cester of the Saxons and anciently the chief town of the Roman province of Britannia Secunda. There we inspected the church of St. Andrew, a curious building with a chequered history, judging by its architecture. In the chancel there are two Norman windows and a south door of the same period. Several fragments of Roman, Saxon, and a bit of Celtic strapwork have been built, haphazard, into the external walls. The Perpendicular tower is a delightful mingling of colour, being constructed of various materials in the same curious manner as earlier portions of the building; the major portion is, however, of red sandstone. There has been some rather brutal restoration, and the south porch was added in 1890.

Internally there are some fine monuments; chief amongst these we noticed an altar tomb on the north side of the chancel to Lord Chief Justice Bromley (1555), whilst on the south is another marble tomb to Sir Richard Newport (1570)

and his wife Margaret (1598), with their recumbent figures surrounded by effigies of their children, as was the usual practice of the period.

Several members were to be observed sketching Jacobean panelling and noting various ornamental devices, such as Tudor roses and scroll-work which form part of the ornament of the Jacobean pulpit in oak.

We had, on the return journey to the main road, a brief glimpse of an imposing fragment of Roman walling which is supposed to have formed part of the south wall of the ancient basilica of the Roman city.

Owing to yesterday's wanderings in search of our pilot car, our Secretaries had taken the precaution of purchasing large boxes of paper confetti, and at all cross roads they left a track of many-coloured fragments to guide us on our way.

This enabled us to twist and turn without a single mistake until we tracked our guiding car to Shipton, and, cold and wet, tumbled out of our motor-brake with some satisfaction at the gate of Shipton Hall, where a fleeting glimpse of sunshine luckily appeared in time for our first view of this fine old place.

Shipton Hall was built about 1589 by one of the Mytton family, and is approached by a terraced garden forecourt. The plan is similar to the letter E; between the gabled wings a slender tower rises in the left-hand corner. From these wings two large square bays project, five lights by two, and running up to the first floor. The whole building is an excellent example of a stone-built manor house in the local style; quiet, effective and showing some refinement in its detail. The tall brick chimneys are well studied and good in outline.

Internally, the hall and drawing-room and some other portions of the building have good Queen Anne decorations; especially we noted a fireplace in the drawing-room with some finely-carved ornamental detail.

The manor of Shipton formerly belonged to Wenlock Priory, but was early in the possession of the Myttons as tenants, for William Mytton, Sheriff of Shropshire, 1456, was "of Shipton."

WILDERHOPE.

After a wayside lunch we proceeded to Wilderhope, where is a very good example of the seventeenth-century house placed on the hillside, and commanding a good view of the surrounding country.

It was originally the home of the Smallmans family; the date 1601 appears in several places, notably over the entrance door and in the plaster ceiling of the hall. An unusual feature is the semicircular stair turret on the north front; this forms a delightful feature externally, and attracted many sketchers.

On approaching the house, one is struck by a splendid stack of five brick chimneys, and the grouping is generally excellent. A remarkable oak door about 5 feet 6 inches wide leads to the small serving passage outside the great hall, but the remainder of the rooms have been considerably altered to



MADELEY COURT.

suit the present tenants. A fine square bay projects on the south front.

Internally, we noticed several good plaster ceilings and a wide span fireplace dating from the original building. Externally, the texture of the coursed rubble stonework from a local quarry no doubt is delightful in conjunction with the stone slates and brick chimneys.

Broncroft Castle, reached after a short run of about five miles, proved to be a modern building of no great interest; some traces of earlier work were to be seen in one of the square towers, and we were glad to linger and accept a welcome cup of tea from the owner before proceeding to

CHURCH STRETTON,

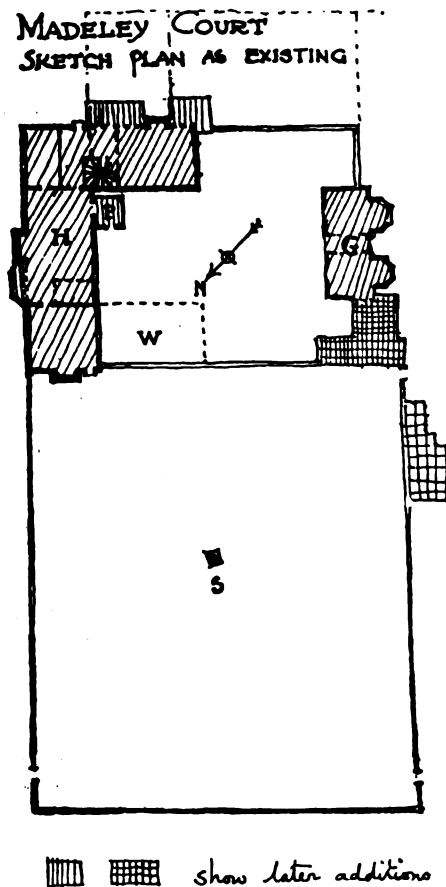
which we reached after a long run, in a heavy shower of rain, which precluded any sketching. Consequently, a brief halt at the village inn was all we did here, and then followed the main road for a distance of about thirteen miles back to our headquarters and a welcome dinner.

Third Day, Wednesday, August 14.

MADELEY COURT.

Madeley Court was the first place visited to-day after a very enjoyable run through interesting country.

Leaving the main road at Wellington, a narrow lane of switchback character led to a desert waste near a pit head, then suddenly down another sharp descent and under a railway bridge, and we came upon the object of our visit.



Madeley Court is now practically a ruin; numerous small cottages have been built into the fine old gatehouse, and the house itself has been altered and added to, especially on the south-west side.

Built probably by Sir Richard Brooke, who died in 1598, the original house was U shaped in plan, preceded by a large

gatehouse with a central arch and two semi-octagon towers standing about 50 feet to the south-east of the main building. One of the wings (W) has now completely disappeared, and was probably removed in Jacobean times, when the porch (P) was added, as the character of the stonework is similar in the end gable and in this porch, with wider joints and little regard paid to bedding in horizontal courses; the old three-light stone mullioned windows appear to have been taken out from the original wing and reset in the newer gable.

The house is a three-storeyed building, roofed with stone slates, part of which have now been replaced by Broseley tiles. The stonework is not in the customary thin, coursed rubble, but rough ashlar in courses, varying in depth from six to twelve inches; the quality of the sandstone in the neighbourhood probably accounts for this, although most of the small houses in the mining district (of which this is now the centre) are constructed of local bricks.

The dormers run straight up from the wall below, cutting through the eaves of the main roof, which are stopped off on each side. A curious feature of the large three-light windows—which are similar to those on the floor below—is the sinking of the labels, owing to lack of space under the coping of the dormer to work the returns of the more usual projecting label.

The chimney stacks are carried up in stone to the eaves line of the main roof, and above this, in the diamond-shaped shafts of brickwork which form a distinctive feature of the houses we have visited in the district.

The gatehouse is similar in construction. The main building is roofed by a single span running at right angles to the entrance archway, now bricked up. The two small towers become completely octagonal above their intersection with the main roof, and are covered with small conical roofs (as can be seen in the sketch). We noticed some good armorial devices and carved panels near the semicircular entrance arch on the lower storeys of these towers, but were not able to inspect the interior of the gatehouse, as it now forms two or three small cottages, and the internal arrangements have probably been completely wrecked.

Of the interior of the house itself one can say little. The large hall (H) is now used as a sort of lumber-room, and has had a part of its extent partitioned off as a store-room for farm implements. A large fireplace occupies the centre of the north-east wall, on either side of which there was a large three-light mullioned window, with a transome. One of these was removed at a later period, and a projecting bay inserted in its place.

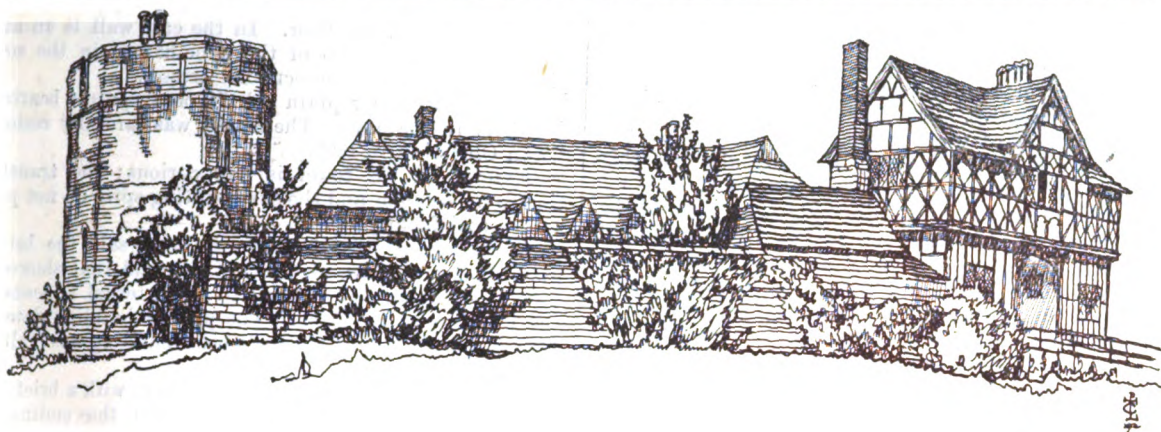
A similar room adjoins this hall on its north-west side, and is now used as a fowl-house, whilst at its south-eastern end is a smaller room and a wide passage leading to a side door, and also (by a turn to the right) to the fine solid oak staircase.

The upper rooms are not now used, and some are not accessible owing to missing joists or floor boards. We noticed some old glazing of good design in one window, but otherwise there is nothing of particular interest.

The Jacobean porch at the south-west of the great hall is perhaps a good example of its kind, but the house does not gain by its addition. The detail is florid and coarse, and the workmanship is not as good as in the house itself.

To the north-west of the building is a large walled court or, perhaps, a formal garden some 180 feet wide by 230 feet long. In the centre stands the famous sundial, its diagonals coinciding with the points of the compass. It consists of a large cube of stone on a low stand, with large concave semi-spheres on three of its sides, each of which once held a dial, now gone, showing the position of the moon and planets, as well as the time of the day. The top has a small dome of the same circumference and size as the concave sinkings in the sides.

The Presidential whistle gathered the reluctant sketchers together once more, and we reached



STOKESAY CASTLE FROM THE SOUTH-EAST.

SHIFFNAL CHURCH,

our next item, after quite a short but adventurous drive. The parish of Shiffnal is ancient. In the Domesday Book it has the names of Heshall or Deshall (Hall of Ide), and Schuffenhal or Shiffnal (Hall of Sceafa). Both names were for a long time used indiscriminately, the present definite form first coming into use, alone, in 1330.

The Saxon parish was a large one. Covering some ten square miles, it included Kemberton, Ryton, Sheriffhaies, Dawley, St. George's, Prior's Lee, and part of Oakengates. The Saxon church (of which nothing now remains) was a collegiate foundation. The present church, dedicated to St. Andrew, dates from 1180, and contains examples of the work of successive periods of architectural development from Norman to late Perpendicular.

The original building consisted of a nave, aisles, transepts, south porch, tower, and chancel, which extended to the present Communion rails. Much of this late Norman work still remains, notably in the chancel arch, which the builders of the Early English period did not utilise for the support of the tower (constructed over the "crossing"), the eastern arch of which stands a yard of two west of this Norman arch.

To this period (Early English) the greater part of the church belongs, including the tower, south porch, nave, north aisle, and south aisle (west of the porch).

A curious feature is the projection of the porch into the church, the inner door opening direct into the nave, thus separating the south aisle into two distinct parts which do not communicate. A *parvise* over this porch looks out eastwards on to the eastern portion of the south aisle, the other sides being walled in; it is reached by a small stair leading to a doorway in the south-west angle. A "priest's chamber" at so early a date is unusual. In later years this was used as a parish school, and before the restoration one of the window panes was scratched with a doleful inscription: "Alas! what grief it is to think the freedom once I had."

The nave consists of four bays built about 1250. The north transept was rebuilt after the great fire of Shiffnal in 1591, when thirty-two houses were destroyed. The roof of the nave, chancel, and north transept, the woodwork of the tower, and the six bells all shared a similar fate.

The walls of the north transept were not afterwards raised to their original level, as the roof line outside plainly shows. A curious carving is placed above the Norman arch (already mentioned), which represents a human head, from the mouth of which is growing a fruit bearing, twisted branch. This has been explained as being emblematical of the preaching of the Word—the Preacher, the Word, and the fruit of the Word.

The fine east window belongs to the Decorated period, and the glass was put in to the memory of Bishop Lonsdale, who died in 1867.

The Moreton Chantry at the south of the chancel is so named from its connection with the Moretons of Houghton Hall. It contains several monuments to the Briggs family.

Another interesting monument is that of Thomas Forster, vicar of Shiffnal in 1526, Prior of Wombridge, and warden of the College of Tong. He is represented as a recumbent figure vested in priestly robes (cassock, alb, chasuble and amice). Arms displayed above show a horn quartered pheon. The Forsters were Foresters of the Royal forest of the Wrekin. Prior Forster was related to Tony Forster, mentioned in Scott's "Kenilworth."

Shiffnal Church was restored in 1879 by Scott, and a new

vestry and choir vestry have been recently added (1900) east of the north transept.

We now adjourned to the Jerningham Arms for luncheon, and were struck by the sign, about three feet by two, on which the arms are displayed in colour and gilding. Mention should also be made of some good "black and white" houses in the usual manner, which attracted several sketchers.

A three-mile run on our motor charabanc brought us to

TONG CHURCH,

which has been rather aptly termed "the Village Westminster Abbey" on account of the monuments which it contains.

Before considering these in detail it will not be out of place to devote a few lines to the church itself.

The first mention of Tong is in the eleventh century, when we find it recorded that Earl Roger de Montgomery had endowed a church here (which he presented to Shrewsbury Abbey) before 1094.

There is, however, no trace of this building remaining; the earliest portion of the present edifice being part of the south arcade in the nave, which appears to date from about 1250.

Elizabeth, widow of Sir Fulke de Pembruge, purchased the advowson from Shrewsbury Abbey in 1410, and converted the building into a collegiate church—we mentioned above that one Thomas Foster, "warden of the College of Tong," Prior of Wombridge, and Vicar of Shiffnal in 1526, is buried in Shiffnal Church—and the greater part of the present church of St. Bartholomew, Tong, was built by Dame Elizabeth about 1410.

The east window in the chancel contains some fifteenth-century glass. The magnificent fifteenth-century choir stalls and elaborately carved screen separating the chancel from the nave are splendid examples of skilful and spirited design and execution; traces of colour and gilding can be discerned in the panels of the screen. There is another screen of similar character near the chantry chapel. The vestry contains a piece of mediæval embroidery, said to have been worked by the nuns in the convent of the White Ladies near by; if this is so, the work is at least three hundred and fifty years old. A library of four hundred and ten volumes was presented by Lord Pierrepont some two hundred or so years ago.

Turning now to consider the monuments, which form such a remarkable feature of this church, it will be best to take them in chronological order.

(i.) Tomb of Sir Fulke de Pembruge († 1408) and Dame Elizabeth, his wife († 1446) (the founders of the Collegiate Church). The architectural ornament of this tomb consists of early Perpendicular panelling filled in with plain shields and large square flowers; on the top are the alabaster effigies of the knight in full armour, with his crest of a Turkish woman's head under the figure—see below—and his lady by his side, both in extremely good preservation, as is the case throughout.

This has been accounted for by the friendship of the Hon. William Pierrepont—owner of Tong Castle and church—with the Lord Protector, Oliver Cromwell.

(ii.) The next tomb is that of Sir Richard Vernon, nephew of, and successor to, Sir Fulke de Pembruge († 1451), and Benedicta, daughter of Sir John Ludlow, his wife. Sir Richard Vernon was Speaker of the Parliament held at Leicester in 1426.

This is one of the finest monuments of the period we

have seen: the sculptured figures of saints and angels which ornament the sides are beautiful studies in pose and expression, and the undercutting of some of the architectural enrichments shows great technical skill; the material used is a fine white alabaster. The figures on the top of this tomb show Sir Richard wearing the plate armour of the period and the collar of the S.S.; his lady also has this collar and the curious horned headdress then in fashion.

(iii.) The third tomb is quite different, as in place of the sculptured effigies Sir William Vernon († 1467) and Margaret, his wife, daughter of Sir William Twynfen, are represented on brasses set in a Purbeck marble slab, which forms the top of this sarcophagus. The valiant Sir William, "sometime Knight Constable of England, son and heir of Sir Richard Vernon, and sometime treasurer of Calais," is shown in the massive armour of the "Yorkist" period, an ungainly mixture of chain and plate in use at the time of the Wars of the Roses. His wife wears the widow's whimple, and her feet rest on an "elephant-like dragon." Their twelve children appear as small figures on the lower part of the slab.

The sides show good Perpendicular work in multifoils enclosing shields and flowers.

(iv.) We now come to the tomb of the founder of the "Golden Chantry" and builder of the Castle. This tomb is placed under a Burgundian arch between the church and the Golden Chantry, otherwise known as the Vernon Chapel noticed below.

Sir Henry Vernon († 1515) was a son of Sir William, and guardian and treasurer to Arthur Prince of Wales, elder brother to Henry VIII. By his side is the sculptured semblance of his wife, the Lady Anne Talbot († 1494), daughter of the second Earl of Shrewsbury. The sides of this tomb are decorated with late Perpendicular arches, canopies, &c., coloured and gilded. Sir Henry is shown in the armour of the "Early Tudor" period, and wears the collar of the S.S., as is (v.) Richard Vernon, Esq. († 1517), son of the above, who died before receiving the honour of knighthood; his wife, Margaret, wears a pointed hood, and at the west end of the tomb is the figure of their son, Sir George Vernon, "King of the Peak," as a boy.

(vi.) is probably the tomb of Humphrey, third son of Sir Henry Vernon († 1542 or 45) and Alice († 1531), daughter and heiress of Sir John Ludlow, of Hodnet: their effigies are incised on a slab, and have been much worn.

(vii.) The elaborate Elizabethan tomb of Sir Thomas Stanley († 1576) and Margaret his wife, daughter of Sir George Vernon, a sister of the famous Dorothy Vernon, whose story does not concern us here. Beneath is represented Sir Edward Stanley, son of Sir Thomas and Margaret († 1632). The upper slab or marble table is supported by eight black marble columns and pilasters (in alabaster) in the Doric manner, with finely-carved panels of ribbon work, &c. Above these, four semicircular arches support the slab and figures already mentioned. Eight tall obelisks of black marble complete a strikingly effective monument. At the head of this tomb are inscribed some lines said to be by Shakespeare, which run as follows:—

"Not monumentall stone preserves our fame,
Nor sky aspiring pyramids our name.
The memory of him for whom this stands,
Shall outlyve marbl and defacer's hands;
When all to tyme's consumption shall be geaven,
Standly, for whom this stands, shall stand in heaven."

Sir Thomas is shown in Elizabethan armour, with his cuirass sharply ridged, and wears a ruff. His wife is also in the dress of the Elizabethan fashion.

Sir Edward is shown wearing plate armour and a wide Stuart collar.

For further particulars with regard to the armour of the period, Macklin's "Monumental Brasses" will be found of great interest. We have not the necessary space to go into detail in this report.

A few words of description must also suffice for the beautiful "Golden Chantry" built according to the will of Sir Henry Vernon in 1515. The specially interesting feature is the fine fan vaulting, which is supported by two half conoids in the centre and four quarter ones in the corners; in the spaces left by the conoids two graceful pendants hang. Traces of gilding on fillets to panels account for the name by which this chantry is known. A brass to the memory of (Sir) Arthur Vernon, rector of Whitechurch, and younger son of Sir Henry, is in a very perfect state on the floor. There is also a figure of Sir Arthur in one corner, with an elaborate canopy above.

The old altar slab here has been replaced, but until 1892 it formed part of the floor. In the east wall is an aumbry and traces of a fresco of the Crucifixion, in the south a piscina and several consecration crosses.

There is a rather plain oak Jacobean pulpit bearing the date 1629 in the nave. The church was carefully restored by Ewan Christian in 1892.

Externally, the tower is very curious; the transformation to an octagon and the surmounting spire do not produce a very satisfactory effect.

With regard to the castle, the least said the better: a distant view sufficed for most of us, and that showed it to have a strong family likeness to the external appearance of the Pavilion at Brighton. The present building dates from 1765, when Sir Henry Vernon's brick building was "altered" into what now exists.

From Tong we return to Shrewsbury, with a brief halt at Shifnal for a really welcome cup of tea, thus ending a very full and interesting day.

(To be concluded.)

ILLUSTRATIONS.

DETAILS OF DOOR FROM HATTON GARDEN.

SOME very interesting examples of interior woodwork are to be found in that taken from No. 26 Hatton Garden.

The mantelpieces especially are very varied and rich in character. The doorways, too, with their fanciful cartouches and enrichments, are very finely carved, while the panelling, although simple in nature, harmonises well with the rest of the work. "Plato's" drawing, which we reproduce, was awarded a prize in the monthly competition of *The Architect Students' Sketching and Measuring Club*.

DRAWING-ROOM DOOR, CHUTE LODGE, WILTS.

CHUTE LODGE, Wiltshire, was designed by the Brothers Adam towards the end of the eighteenth century. The plan is quite symmetrical, with a central elliptical staircase having an Ionic colonnade to attic landing supporting the dome. The hall is on north and octagonal drawing-room on south side, and dining-room and library east and west respectively.

The walls and ceilings of the reception rooms are elaborately enriched with plaster decoration in the characteristic Adams style. The chimney-pieces are well designed in various coloured marbles.

The doors are of polished mahogany, and architraves in pine painted white and picked out in gilt. The detail has been carefully thought out, including the beautifully modelled brass furniture.

The elevations are also symmetrical with a bay in centre of each. The lower stage is of rusticated stonework and brickwork above this, with a wide deal cornice.

Mr. J. L. Pearson, R.A., made some additions to the north front and altered the terrace steps. A servants' wing and other improvements were carried out under Mr. C. E. Ponting, F.S.A., a few years ago.

The drawing reproduced obtained for Mr. J. C. Robinson a prize in the monthly competition of *The Architect Students' Sketching and Measuring Club*.

INTERNAL DOOR, CASTLEGATE HOUSE, YORK.

CASTLEGATE HOUSE, York, can boast of being an exceedingly fine example of eighteenth-century architecture, for it is one of the masterpieces of the work of John Carr, of York (1723-1807).

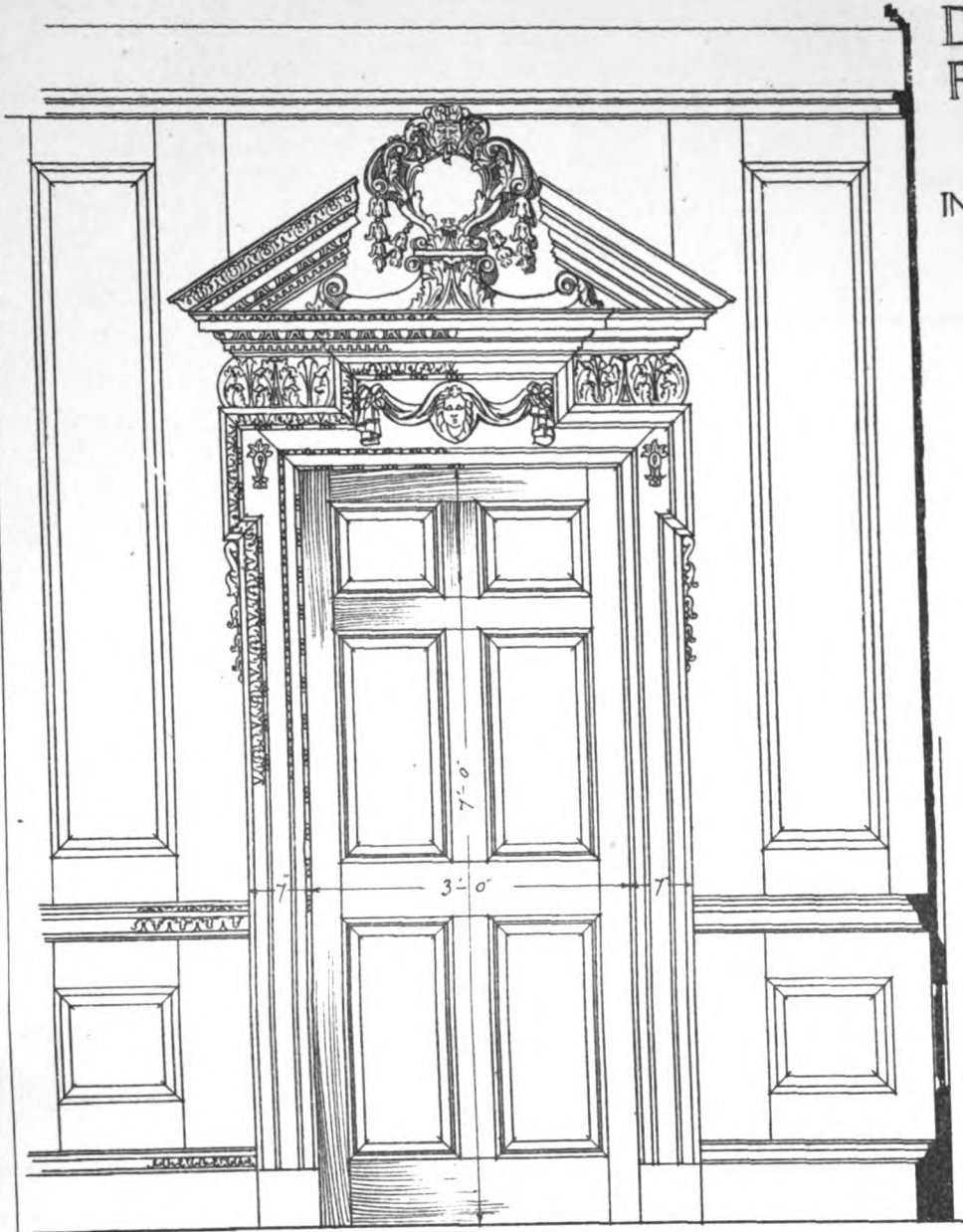
This mansion is now used as a city club, and the members are exceedingly proud of their residence, as the interior fixtures cannot be excelled elsewhere in the country.

The door shown in our illustration is one of four opening out from the first floor landing, all of which are of the same character, except that they vary in ornamentation, which is profusely distributed on them all. The doors are executed in wainscot oak, also the skirting, which has been unwisely painted.

The carved panels over the door are of exquisite workmanship and design; they appear to be carved out of lime-wood and stuck on; each one is of different design, varying from the delicate intertwining of bay leaves to the broad massing of fruit and flowers which is so characteristic of Carr's ingenuity in its prime. The drawing by Mr. G. C. Styles which we reproduce was awarded a prize in the monthly competition of *The Architect Students' Sketching and Measuring Club*.

DETAILS OF DOOR
FROM HATTON
GARDENS.

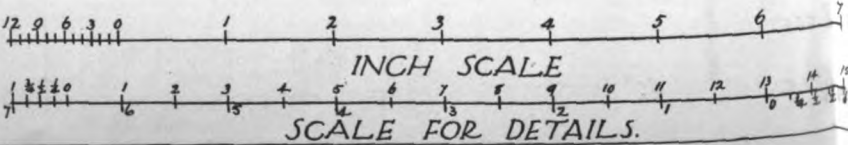
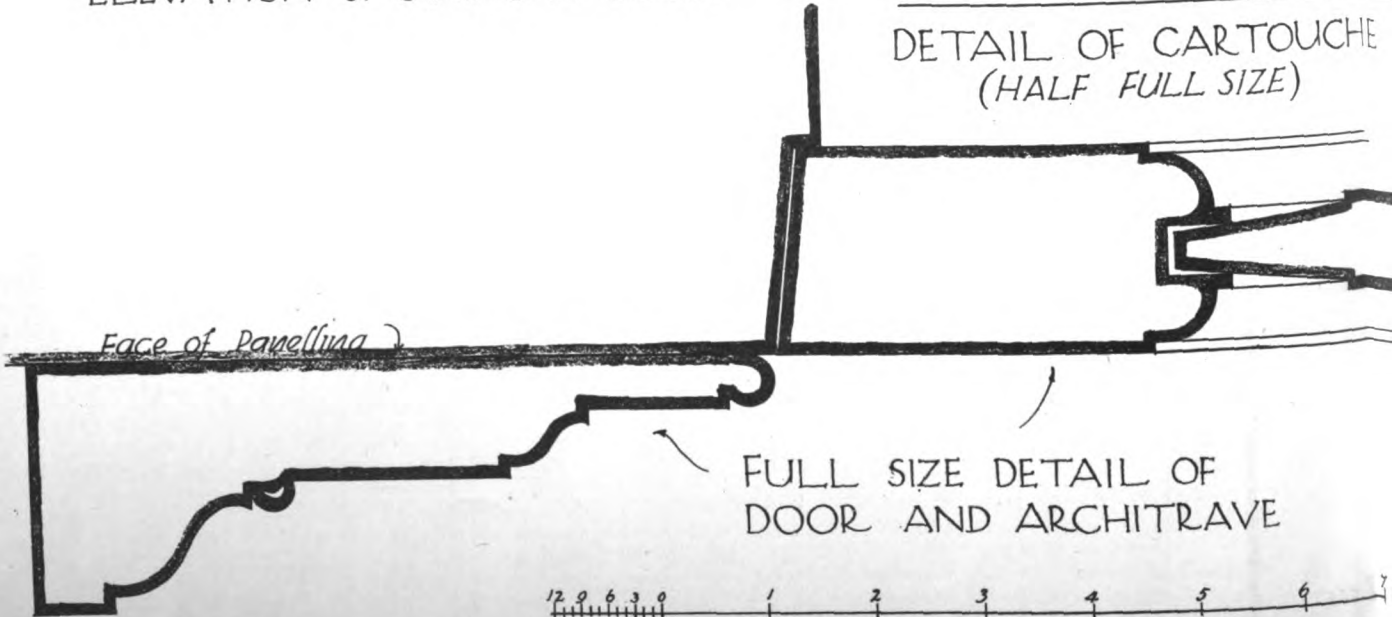
INCH SCALE AND HALF
FULL SIZE DETAILS



ELEVATION OF DINING R^M DOOR



DETAIL OF CARTOUCHE
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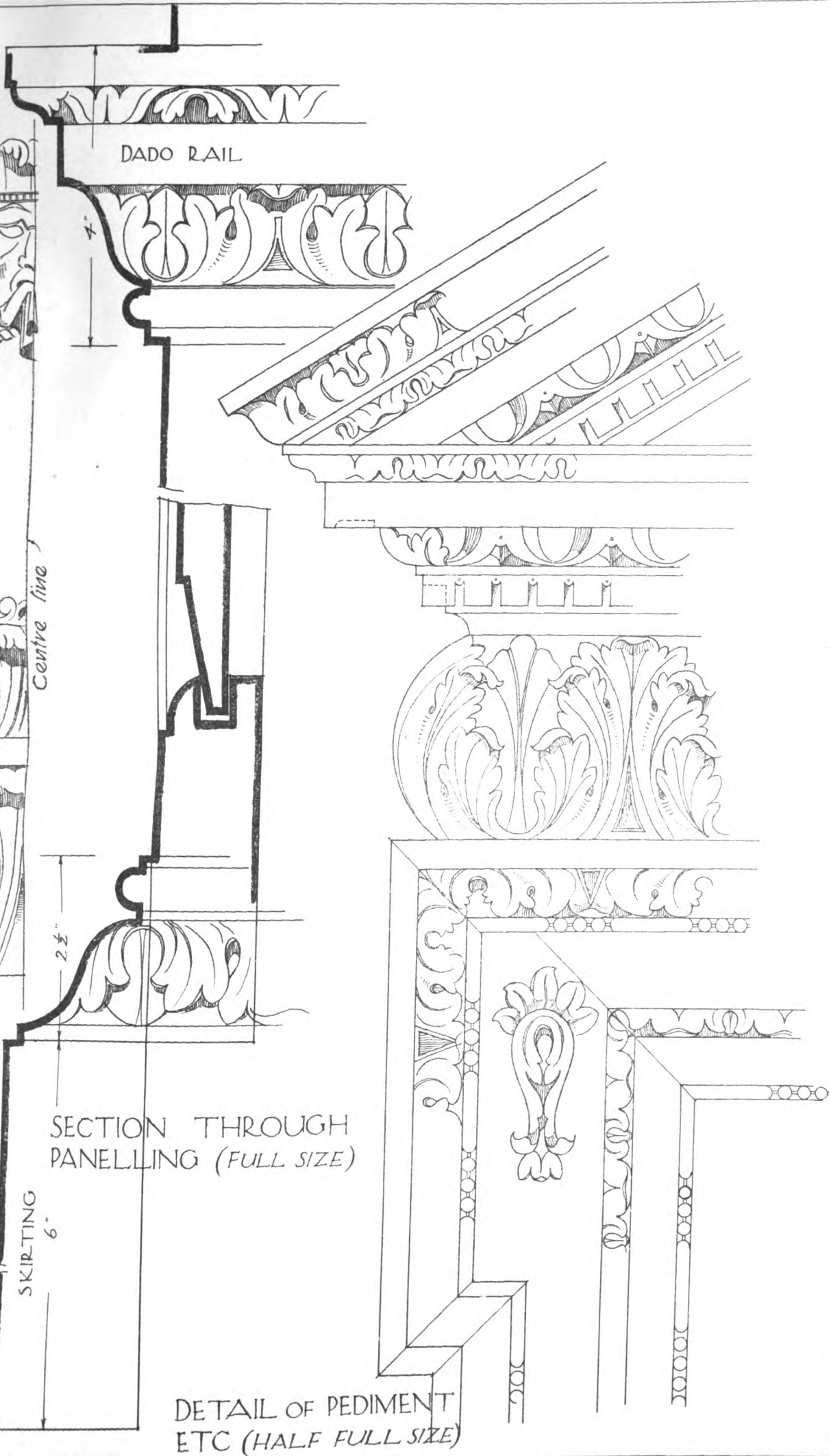


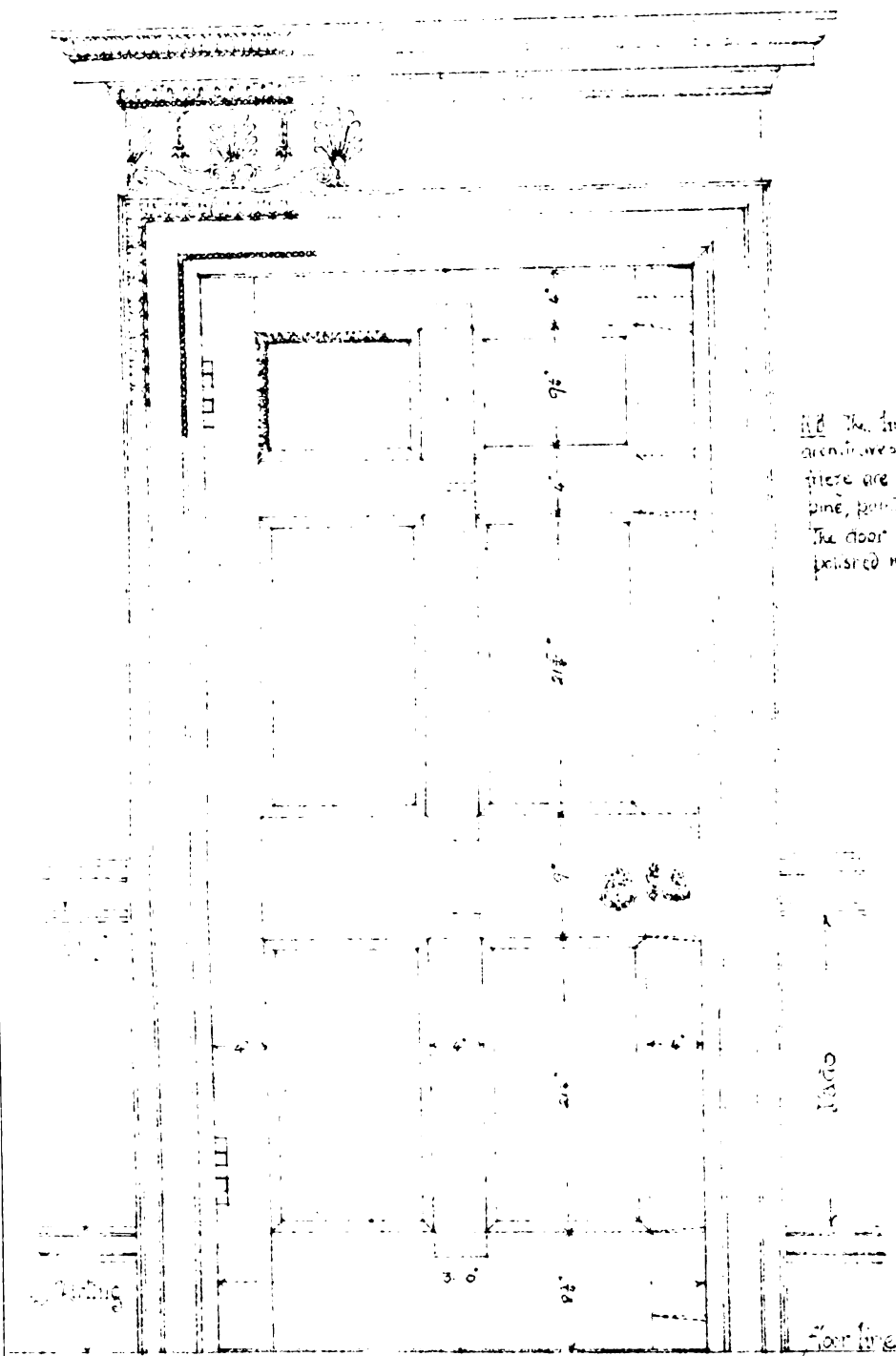
PHOTO-LITHO. SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.





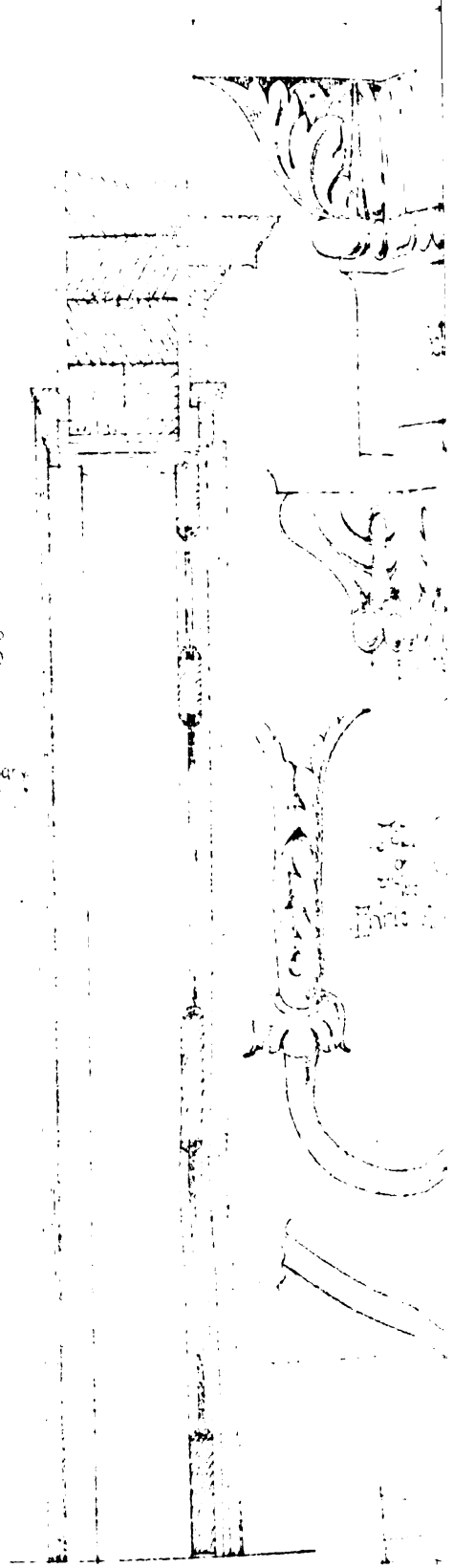
DRAWING ROOM DOOR

CIVIL LODGE, WILTS. THE BROTHERS ADAM, ARCHITECTS.



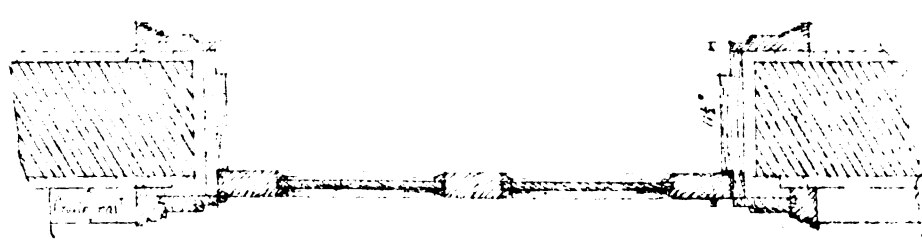
Note: The transoms and frame are of pine, painted. The door is of polished mahogany.

Elevation:
Scale 1/4" = 1 foot.



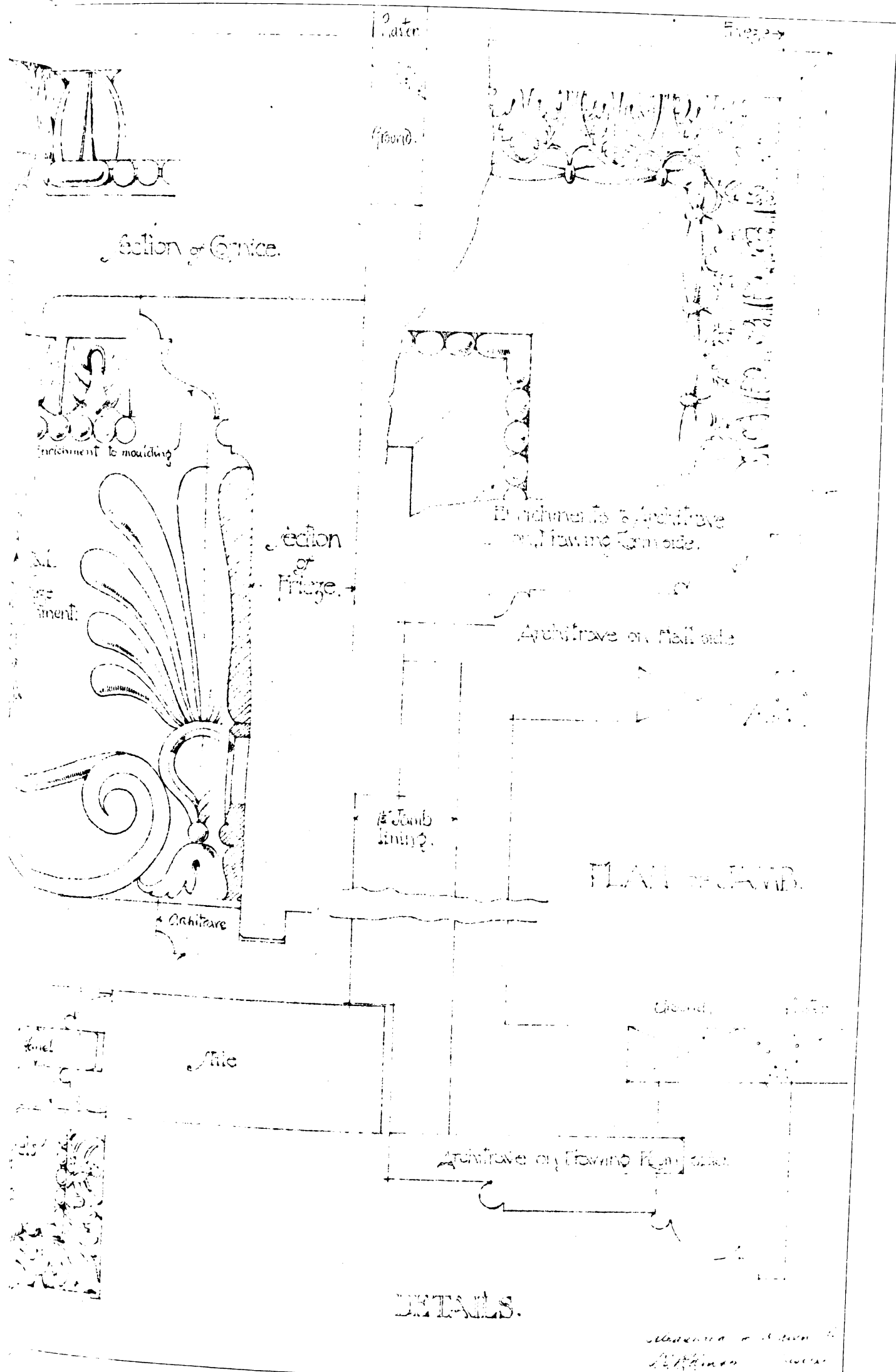
Section:

Finished moulding to form development of detail.



Plan:

Note: The hall is elliptical in plan, & the drawing room octagonal, making well of thick masonry.



Designed by J. H. ...
Lithographed by ...

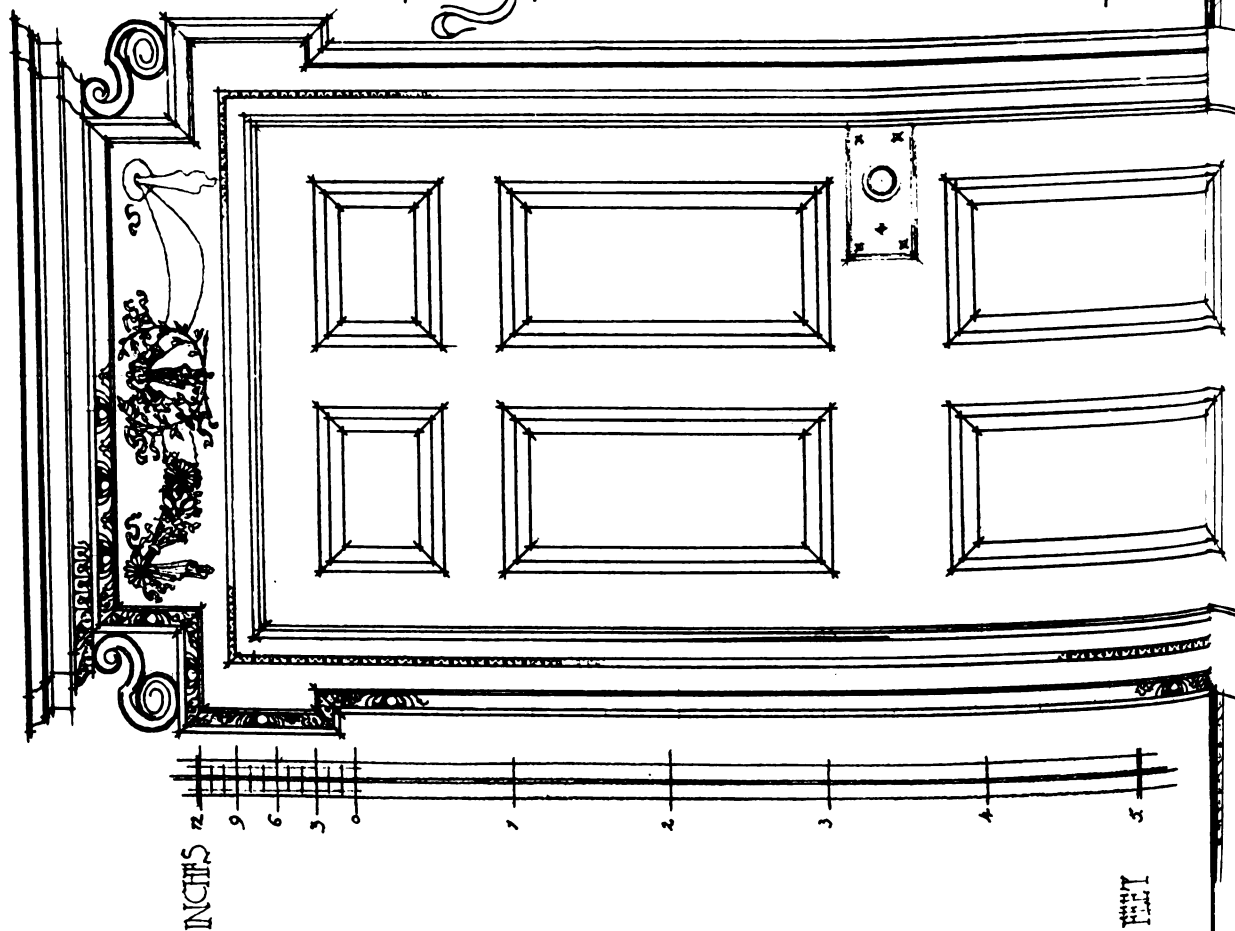




The Architect, Aug. 23rd 1912

INTERNAL DOOR CASTLEGATE HOUSE

YORK



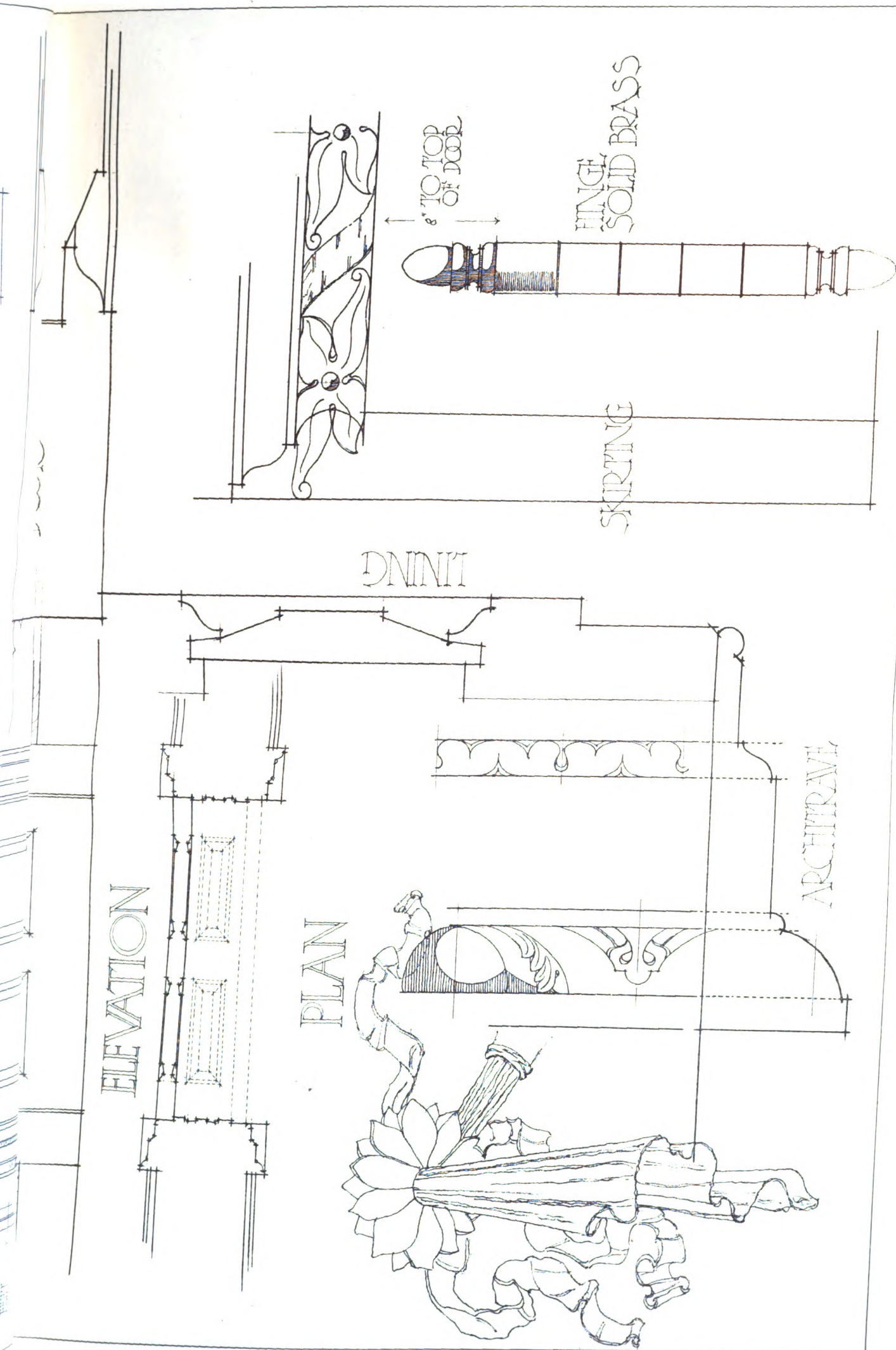
PROJECTION 7

1" PROJECTION

CORNICE

DETAILS

DOOR



"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.
 Prize Drawing by "PLATO."

PHOTO: ITHO SPRAGUE & CO. 69 & 70, DEAN STREET, BONG, W.

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INTERIOR DECORATION.—III.

GREAT BRITAIN.—I.—TRANSITIONAL PERIOD.—RENAISSANCE.

By ALBERT E. BULLOCK, A.R.I.B.A.

(Continued from last week.)

THE inlaid room from Sizergh Castle, Westmorland, is one of the most complete examples of panelled rooms at South Kensington Museum. The panelling is inlaid with holly and bog oak, the patterns vary considerably, and the whole room presents a very rich appearance.

The period of transition instituted by Inigo Jones, who was born in 1573, was about to be accomplished. At twenty-four years of age he went on his first tour of seven years to Italy, and paid his second visit there some nine years later. In the interim several large houses were in course of erection in the prevailing style, as Boughton House, near Banbury, and Lord North's estate at Wroxton, about which time also the Reindeer Inn was probably panelled.

Sir Paul Pindar's House in Bishopsgate; Canonbury Tower and Somerset Lodge in Alwyne Place, Highgate, all date about 1600 A.D.

Both Burton Agnes, in Yorkshire, and Quenby Hall, Leicestershire, were commenced the year prior to the decease of Elizabeth and the accession of James I. of England and VI. of Scotland in 1603.

Building operations were commenced this year at Audley End, Essex; also alterations and decorations to Knowle House, near Sevenoaks, under the ownership of Lord Buckhurst. Here the ceiling of the Cartoon Gallery is an exceptionally fine piece of modelling and a great favourite. The continuous curved ribs delicately ornamented with the grape vine pattern running the length of the hall give a particularly pleasing effect. The carving to the pilasters is bold, although the work still retains Elizabethan grotesques. The lower portion of the chimney-piece, with double Ionic marble columns, is in better taste than the crowning feature; this latter is, however, rendered less offensive by reason of the contrast. In the ball-room the plasterer has taken a good deal of license in his high-relief frieze. The curved ribbed panelling is an unique example, while the ceiling differs from the long gallery in having the introduction of straight rib work and square panels. The chapel contains some beautiful tapestries from the Mortlake works. The portraits of Vandyke and Crane figure in some of the tapestries here. The house itself is of early Tudor origin, having been built about 1547-60 by Archbishop Bourchier. Thomas More spent his early years here, being a member of the household of John Morton, Archbishop of Canterbury, in 1492. The plan of the buildings conforms to the usual principles of Tudor work, having a gate house on the west side leading to a large quadrangle, on the left of which the stables are situated with a corresponding wing on the right or south side. The entrance to the house courtyard is axial with the gate house, and the great hall faces the entrance, occupying the east side of the court. The south front is of more regular formation, the central colonnade being flanked by the library on the west and the tower on the east, beyond which the chapel can be discerned. The varied changes in ownership hardly concern us in the survey of decorations. Its history will be found in Mr. Tipping's review in *Country Life* for May 25 and June 1, 1912.

Bernard Jansens and John Thorpe are said to have been employed together on Audley End, the latter finishing his work there in 1616. Many chimney-pieces erected in this reign had polished marble and stone inserted like jewels. At Hatfield there is a chimney-piece so treated having several pieces of polished Irish "Blue John" inserted in small carved wood panels. An example from a house at Bristol shows this method of treatment. The ceiling beams are a little heavy, and inclined to dwarf the room somewhat. The carved pilasters are executed in an unusual manner and are quite decorative.

St. Peter's Hospital, Bristol, and the example from Tewkesbury are of much earlier date. The design of the flanking panels in the latter example and the mantel bed-mould anticipate the work of the following period.

The palace of Bromley-by-Bow, which was demolished in 1894, and of which there is preserved an entire room and ceiling in the woodwork section of the Victoria and Albert Museum, would appear to have been erected in 1606, which is the date given on a stone found during the demolition.

The pattern of the ceiling is the same as the ceiling of King James's drawing-room at Hatfield House, except that the latter mentioned example has rather more elaborate pendants. The coat of arms in the centre of the chimney-piece is very boldly carved. The door frames which flank it are of later date. The panelling is bolection moulded, and there is traceable in the carving and arabesques the influence of Italian work.

A candelabra and some fire dogs preserved in the Museum were obtained from Bromley Palace; the former is of seventeenth-century pattern.

John Thorpe was engaged on Sir Walter Cope's residence, Holland House, Kensington, from 1600 until the death of Cope in 1614. In the external architecture there are many features traceable to the influence of a work published in 1577 at Antwerp by De Vries, entitled "*Architectura*."

In subsequent years many additions and alterations were effected, notably by Mr. Saunders in 1796 and more recently by the late Colonel Edis; it is now the residence of the Right Hon. the Dowager Countess of Ilchester.

One of the original rooms has been preserved intact, viz., the "Gilt Room," which is situated on the first floor of the south front. This room was decorated by Francesco Cleyn, who died in 1658. He was brought over from Germany to assist Sir Francis Crane at the Mortlake Tapestry Works, which were rebuilt in 1619 on the north side of High Street at a cost of £2,000.

The "Ancient Parlour" is treated, architecturally, very similarly to the "Gilt Room," but the wall panels are larger, while those to the doors are smaller. There is a curious chair in this room, said by Walpole to be the work of Cleyn. It is painted white and gilt. It has a fan-shaped back, moulded and shaped arms, and the seat is supported on scrolled carving.

The "Gilt Room" is highly coloured. The frieze is painted white with a green centre, and blue ground picked out with gilding. Three sides of the room are uniform. The ends have three pilasters each, the panels, however, are irregular in number. Pilasters are placed between each of the bow windows, and the decorative panelling is continued round the interior of the large bow. Within each panel is a small raised fillet forming an ornamental border in three varieties. The paintings on the panels consist of alternating cross-crosslets with fleur-de-lis, charged with the arms of Cope and Rich surrounded by an earl's coronet, with palm or oak branches in gold shaded with bistre. The figures over the fireplace have the flesh painted, the rest being gold shaded; the lower columns are painted black, the upper ones Sienna marble with gilt ornaments to the lower part of the shaft; the horns and caps are also gilt.

The busts of King William IV. and George IV., when Prince Regent; Lord Holland, Francis Duke of Bedford, Napoleon, and many others now adorn the room, and are the work of many eminent sculptors.

The original painted drawing of this room by Mr. C. J. Richardson is in the possession of Mr. Phenè Spiers.

The measured drawing (published in *The Architect* of July 5) of the remaining side of the first floor front room, No. 17 Fleet Street, recently restored by the late Mr. Clement Sturge, under the auspices of the London County Council, is a typical example of Early Jacobean work, having been executed about 1610—the beam at the south side of the ceiling is given in Roland Paul's measured drawing, and was not reinstated when the restoration was effected. A piece of the original cornice is now in Horniman's Museum. The central panel of the ceiling contains a modelled representation of the Prince of Wales's Feathers accompanied with the capitals "H. P.," which has led some to suppose that the room was once in the possession of Prince Henry. Mr. Philip Norman (who is perhaps the greatest living authority on London relics) states there is no foundation for this assertion.

The hall of the Vicars Choral in South Street, Exeter, is curious in being obviously seventeenth-century work, and yet retaining the linen carved panels of the previous century. The woodwork has unfortunately been painted and varnished, which has taken away much of the effect it would otherwise have. Some of the panelling is deal stained to match the carved work. The hall is of earlier origin than the panelling, the college having been founded by Bishop Brantingham in 1388, whose arms (in conjunction with those of Bishops Oldham and Lacey) are carved on the mantelpiece. The panels of the gallery screen are painted with portraits of some of the Bishops of Exeter, including Leofric.

(To be continued.)

COUNTRY HOUSE SEWAGE PURIFICATION.*

WHEN we come to consider the question of a suitable installation for a small hamlet or isolated country house, whether large or small, we have special factors which have to be taken into account. Some of these special considerations are worthy of discussion. The question of site is the one which has naturally to be considered first, and it is evident that the range of choice must be very considerably limited.

While it should be borne in mind that the installation should be situated as far as possible from the house or houses on the one hand, or from a public highway on the other, this will have to be governed by the question of levels, and the possibilities of final outfall for the purified effluent, and it may be taken as an axiom that unless lifting by some means is feasible it is not possible to obtain satisfactory results with an available fall of less than 5 feet from the invert of the incoming drain or sewer to the final outfall, unless in some exceptional instances the nature of the sub-soil is capable of providing free soakage, as, for example, on gravel or chalk. This limitation of site makes it essential that special steps be taken to ensure against offence from the sewage works to either eyes or nose.

The claim is often made that a properly designed sewage disposal plant should not smell, but it has been pointed out by an eminent member of this Institution that for some reason, at present not fully understood, a sewage installation may be free from smell for 360 days in the year, and yet be a source of offence on the remaining five days. It has often been noticed that such occasional aerial nuisance is specially evident before rain, and the explanation, in my opinion, is that a sudden fall in the barometric pressure draws out the naturally foul air from the interstices of the filter beds, and the probable humidity of the atmosphere inclines to aggravate the tendency to smell.

Thus it is obvious that special provision must often be made in connection with these small schemes for screening and for reducing the possibilities of air pollution.

In practice I have found that the ordinary ferro-concrete or wooden covers to the tanks in conjunction with shallow trays, formed of small mesh expanded metal filled with a layer of peat-moss litter over the filter beds, is sufficient to overcome this difficulty. It might be pointed out, however, that these trays should be above the discharge pipe from the tanks, so as to check the free passage of foul air from the tank when a sudden increase in the rate of flow of the incoming sewage takes place.

The second point upon which I would suggest discussion is the question of increased tendency to smell caused by the relative septic condition of the tank effluent.

The absence of regular attendants, and the impracticability of installing sludge lifting and pressing plant for a small installation, renders it necessary to try to devise some alternative method.

I believe that the Hydrolytic tank of Dr. Travis, in England, the Emscher or Dortmund tanks in Germany, and the modification of these as designed, I think, by Mr. Aird Murray in Canada at the Lethbridge Works, point the way in which this modification should be sought, for in such a tank the liquid sewage which constitutes, I suppose, roughly 95 per cent. of the total volume can be treated in an aseptic condition, while septic action may be utilised for its sole useful function of breaking down and digesting the solid portions, so as to render them more capable of being attacked in the filter bed or removed from the tank.

I have found in a large number of cases that a tank formed somewhat on these lines, which perhaps may be called a semi-septic tank, is capable of discharging to the filter beds an emulsified effluent containing a considerable proportion of the solid matter in suspension, and collecting a thick scum of irreducible fibrous particles at the top, with a very slight deposit of sludge at the bottom of the tank. The capacity of such a tank in relation to the average daily flow is one which requires some consideration, as in my opinion it should be as small as possible, consistent with an adequate scum-forming capacity, so as to require as infrequent attention as possible, and the depth should be great in relation to its area. It will be seen from what I have already said, that personally I am in favour, in the small installations which have not the advantage of regular attention, of passing to the filter bed as large a proportion of solid matter as is possible, in contradistinction to the practice of the municipal engineer, who prefers to keep back his

solids and deal with them in bulk, and to take a very weak effluent on to his percolating filters.

I believe it will be found much easier to occasionally change the material of the upper portion of the filter bed than to increase the quantity of solid matter which has to be removed from the liquefaction tank.

This brings me to another point on which I should like to suggest some thoughts—namely, the effective distribution of the stronger tank effluent on to the filter bed surface. There is no doubt, in my mind, that efficient distribution and aeration are the most important factors in securing a non-putrescible effluent.

No form of perforated pipe distribution should be allowed on account of the constant liability to choke, neither can small rotary contributors dependent for their movement upon the reactionary pressure of the outflow be relied on; and any system of fixed sprays, even if sufficient head is available, are liable to cause some smell, although they possess the advantage of increased aeration if they can be used in isolated places.

An upward water-logged filter cannot by any possibility be more than a mechanical strainer, and this might be more easily arranged by means of fine wire screens. The provision of a filter bed which depends for its distribution on the overflowing of a series of ducts or channels, which, although originally fixed level, never remain so, results in the sewage short circuiting through the bed in two or three places, and is more or less useless.

I have found that the most satisfactory method of distribution is by means of a series of serrated edged channels or troughs which may be fed intermittently by means of either an oscillating tipper or from a dosing syphon, or, better still, may be made to revolve or travel over the surface of the bed by mechanical or hydraulic pressure. There is another small point which should be considered in relation to small sewage installations which is of little moment in connection with a public sewerage scheme, and that is the provision of suitable grease-traps. Grease or fat is the slowest substance to be affected by aerobic bacterial action, and tends to clog the interstices of a filter bed and prevent the liquefaction process in a septic or semi-septic tank.

Hence the flushing-rim grease-trap, which, excellent as it may be when it is desired to easily discharge all such matter from a kitchen sink into a public sewer, is not suitable with a private sewage installation, and a large capacity trap, preferably of twenty or twenty-five gallons, so as to avoid the necessity of too frequent attention, should be used; this should be fitted with properly constructed dirt-basket or scoop, and cleaned out at least once a fortnight. This will make considerable difference to the efficient working of the sewage purification plant, and lessen the chance of smell from the installation.

Another point which should be noticed is that great care should be taken with the use of disinfectants. These are so freely used nowadays in houses connected to public sewers, and yet the volume is not sufficient to interfere with the municipal sewage works, but the writer has frequently found the bacterial action of a small installation entirely suspended and the tanks and filter-beds rendered practically sterile by this means. If infection from the effluent be feared, then disinfect after purification, and not before, or else it is probable that the purification will not take place at all.

A word or two may be said in comparison of the relative cost of installing and maintaining a municipal as against a private installation. I think it may be fairly assumed that the capital expenditure charges are about 30s. to 40s. per head of the population dealt with in the former case, as against £4 to £5 per head from a private installation.

The relative figures as to maintenance may roughly be put at from 7d. to 1s., as against 1s. 6d. to 2s. per annum. If the initial cost of a private installation seems high, it must be remembered that in many country districts the only alternative is the old cesspool system, with its constant expense and danger to health, and, fortunately, the builders of country houses are gradually being educated up to realising that an expenditure for this purpose is a wise one.

In the discussion on Mr. Tuke's paper, Mr. W. Kaye Parry (Dublin) said he had been associated with the question of sewage purification for a great many years, and there was one observation he desired to make on the whole subject so far as it related to country house and isolated institutions. It was that the younger men there would perhaps learn something by looking back and seeing how the question was handled by early reformers in sewage purification. In his early days Mr. Rogers Field, Mr. Bailey Denton, and others dealt very successfully indeed with the sewage treatment of country houses, and many of the in-

* Abstract of Paper read before the York Congress of the Royal Sanitary Institute by Mr. John E. Tuke (Member).

stallations which they put in were excellent models, which could even be followed with advantage at present. They believed, as he believed then, and did still, that sewage purification could be dealt with in a country house without putrefaction, for the reason that the sewage came down within three or four minutes from the time it entered the drain. What Mr. Rogers Field did was very simple. He screened out the solid matter as well as he could, and he allowed the liquid, which at that period was inoffensive, to flow over the land where the land was suitable. Mr. Bailey Denton put it through a process of intermittent filtration, which was really the bacteriological process, although he did not know it. Most excellent installations were carried out and were working well at the present day. Twenty-five years ago he himself installed a system for the late Duke of Leinster. The sewage was screened, and the liquid was put on the land, and was still being put on the land. From that day to this they had had no trouble. Unfortunately a good many of them came under the septic tank heresy, which was that they could not purify sewage without putrifying it first. In large towns the sewage was putrid before it reached the works, but he was satisfied that the solution of the problem so far as single houses and isolated buildings were concerned was to deal with the liquid whilst it was fresh. They should get the best screens they could to screen off the solids, which they could mix with dry earth and put on the garden with the greatest possible advantage. Then they could deal with the liquid so that it did not smell, and there was no trouble or offence. He was ashamed to confess that he was bitten with the septic tank heresy, as he thought it must be right, but he tried it and had never been half so successful as with the earlier work he did, and he was inclined in his old age to go back to the lines on which he started work. He thought that to a large extent Mr. Tuke was with him.

Dr. Tempest Anderson considered that troubles arose because the whole system of sewage treatment was wrong in theory and possibly because it had been forced upon the world by practice. In the large towns it was impossible to use any other system, but the difficulties increased in proportion to the size of the installations put in. But to put these installations in small villages seemed to him absolutely repugnant, and if the same ingenuity had been expended in getting the manure on the land the results would have been fifty times better. He supposed, however, that sanitary engineers found it more profitable to put in large installations, on which they got a large commission.

Mr. Costain (Great Crosby) said he well remembered attending a congress when Dr. Cameron introduced the septic tank theory, which it was expected would create a new heaven on earth. He did not think it had done all that was expected of it; but for a large country house or for a number of smaller houses he considered an adaptation of the septic tank principle absolutely superior to the system described by Mr. Kaye Parry. The solid matter required very constant dealing with, and it was not possible to get it satisfactorily dealt with. By the septic tank and subsequent filtration they got a liquid matter which could be easily dealt with, whilst the solid matter could be dealt with once in six months.

Mr. Burleigh (York), as an architect, thought local authorities were making a big mistake in insisting on water-closets in country districts and having large sewage works which entailed a lot of money. Dr. Poore had told them that in Holland they had no water-closets and the Dutch were not a weakly lot of people, but, on the contrary, were very energetic and were able to export a lot of foodstuff, because they took advantage of natural conditions and used the manure for the land instead of throwing it into the sea.

Mr. Fairbank remarked that with a properly designed sedimentation tank of not too large a size, and with large, coarse clinker and a fine and regular distribution over it, there should be no nuisance with a small installation for a house of ten or fifteen people.

Mr. Tuke said that whilst agreeing with Mr. Kaye Parry as to dealing with the liquid when fresh and sweet, he thought it was impossible to arrange for the screening out of the solids for a small house or hamlet. With regard to manurial value, would not efficient treatment in a tank such as the last speaker suggested give a liquid possessing even more fertilising value than crude sewage?

MR. JOSEPH HUMPHREYS, architect, Maesteg, has been appointed architect for the cottage hospital proposed to be erected at a cost of £2,500 at Maesteg, Wales.

CHURCH ARCHITECTURE IN NORTHAMPTONSHIRE.*

At Northampton, where we are somewhat south of the centre of a very long and narrow county, we are on the border-line between two architectural districts. To the west and north, in a somewhat broken and hilly country, where good building stone is rare and there are no facilities for water-carriage, the church architecture, although it is not without its points of interest, and although there are several notable exceptions to a general mediocrity, has no features of special beauty or of local interest.

Near the south-west extremity of the county there is a group of churches in and near the Cherwell valley, where the greenish Hornton stone is employed from Oxfordshire quarries, and the mason-work is consequently allied to that of which the Oxfordshire churches of Bloxham and Adderbury are the most noble examples.

But when we speak of the churches of Northamptonshire we refer especially to those of the district east and north-east of Northampton, and to the special type of architecture which was developed in and near the valley of the Nene. Here conditions prevailed entirely opposite to those which in the hillier parts of the county checked architectural development: building-stone was plentiful and a navigable stream made it easy to obtain the best stone from the quarries of Barnack, Ketton, and Weldon, none of which are far removed from the river valley. The churches of the Welland valley on the north-east border of the county, although not equal to those of the Nene valley, form a subdivision of the same architectural province, connecting it with the churches of Leicestershire and Rutland; while in the neighbourhood of Peterborough we come into close relation with the fenland and marshland churches of Lincolnshire and the district round Wisbech, which owe their exceptional beauty to the use of Barnack stone. There are thus points in common between the architectural conditions of Northamptonshire and those of Lincolnshire, and in both cases the county town stands at a point at the head of a navigable river, where on one side in an upland and scantily watered county the interest of the church fabrics is occasional and unequal, while on the other side in the well-watered lowlands almost every church has a special claim to distinction. It may be noted, however, that while the church architecture of the borders of Lincolnshire affects rather than it is affected by the influence of neighbouring counties, the borders of Northamptonshire, an entirely inland shire, show a distinct tendency to receive impressions from outside.

Only in one Lincolnshire district, the right bank of the Trent at and below Gainsborough, and the neighbouring isle of Axholme, is external influence very clearly manifest, where the river becomes a vehicle for Yorkshire magnesian limestone.

In Northamptonshire, on the other hand, although Barnack provided Lincolnshire, Cambridgeshire, Norfolk, and even Suffolk with a large amount of stone, yet the influence of the neighbouring districts is clearly felt. The quarries of Ketton and Clipsham were both outside the county; and just as in Lincolnshire north of Stamford the Ancaster quarries had their influence on the country west of the Witham, so in Northamptonshire the mason-work of Rutland seems to push its influence south and east of the Welland and meet the type of mason-work represented by the Nene valley churches.

In one respect Northamptonshire has a considerable advantage over most other counties. Probably Durham, Kent, and Lincolnshire are the only three counties which can compare with it in the possession of remains of pre-Conquest churches. Apart from the interesting survival of the foundations of the Saxon abbey church at Peterborough, we have at Brixworth the most complete example in England of an early church on the basilican plan—shorn of its aisles, it is true, and otherwise modified, but a building of the original disposition of which the signs are very distinct. The great size of the church at Brixworth and the free employment of Roman tiles in its construction, led, as is well known, to the theory, once very generally held, that the building was a Roman secular basilica, converted to the purposes of a church. This theory, which was fantastic in itself and historically unsound, has long been abandoned; but there seems to be no reason for disputing the high probability that the greater part of the present church was built about A.D. 680 by a colony of monks from Peterborough. Its antiquity is therefore equal to that claimed for the oldest

* An abstract of a Paper with lantern illustrations read on July 24 by Mr. A. Hamilton Thompson, M.A., F.S.A., at the Summer Meeting of the Royal Archaeological Institute at Northampton.

parts of the churches of Monkwearmouth and Jarrow; while in one respect, the triple arcade in the screen wall between the nave and the space in front of the apse, it shares a feature with some of the earlier churches of the group associated with St. Augustine and his followers in Kent, and with the outlying churches of South Elmham in Suffolk and St. Peter-on-the-Wall in Essex. But Brixworth, apart from one or two special features of its own which give it an absolutely unique value among early Saxon churches, has also the rare peculiarity, which elsewhere is not so easy to discover, that the greater part of the modifications in its structure may be referred to a date earlier than the Conquest. The late Mr. J. T. Micklethwaite, in a famous essay which appeared in the *Archæological Journal* some fifteen years ago, claimed that no less than four different periods of Saxon work were to be detected in Brixworth Church; and although the claim is possibly excessive, there can yet be no doubt that the fabric underwent at least one considerable effort of repair and alteration, and that at a date which may be tentatively assumed to be earlier than the eleventh century.

It is noticeable that there is only one definite feature at Brixworth—the large triple window-opening on the first floor of the tower—which connects it with any of the architectural details of the equally famous tower at Earl's Barton, so that, however many periods of Saxon work may be discovered in the church, there is one period, generally taken as characteristic of Saxon church-building, of which at Brixworth hardly any traces survive. To this period belong the tower at Earl's Barton and the lower part of the tower at Barnack. In their exceptional dimensions these are allied to the ground plan of the tower at Barton-on-Humber in Lincolnshire, which the Institute visited three years ago. But while there we have direct evidence as to the plan and dimensions of the Saxon church, of which the ground floor of the tower formed the nave, the actual plan and extent of the fabrics at Earl's Barton and Barnack are doubtful. At Earl's Barton there seems, as at Barton-on-Humber, to have been a somewhat narrower building, probably a chancel east of the tower, so that the tower may have formed the body of the church; but at Barnack the building east of the tower was wider, and the ground floor of the tower was used, as a triangular-headed recess in the west wall indicates, for some purpose not immediately connected with Divine worship.

"Long-and-short" quoins and strip-work of dressed stone, forming decorative bands upon the surface of the rubble masonry, are features of the towers of Barnack and Earl's Barton, and at Earl's Barton diagonal strips connect the upright pieces with a very ornamental effect, which recalls the effect of the superimposed arcades of strip-work, one triangular-headed, the other round, at Barton-on-Humber. A striking feature of the tower at Earl's Barton is the use of baluster shafts to divide the window-openings, both in the top and lower stages. These are purely ornamental facings to the solid pieces of wall which form the actual divisions, and, unlike the mid-wall shafts of late Saxon date or the baluster shafts in the tower window-opening at Brixworth, they are merely supports to the front parts of their arches. While the original top stage of the tower at Barnack has been superseded by a beautiful late twelfth-century octagon, Barnack has a compensation for this loss in its fine and unusually broad tower-arch, while the tower-arch at Earl's Barton appears in its present state to retain no original feature.

Professor Baldwin Brown has given reasons for assigning the date of work of the Earl's Barton and Barnack type to the later part of the tenth century. Although this theory cannot be accepted as a certainty, there is yet much historical evidence to back it up, and it sets important considerations in array against the cherished idea that strip-work and its concomitants were derived in the first instance from construction in timber. Assuming this date for the towers, there is a gap of at least three centuries between them and the earliest work at Brixworth—a gap nearly equivalent to the time which separates us to-day from Sir Thomas Tresham's buildings at Rushton and Rothwell. Of late Saxon date also are parts of Geddington, Green's Norton, Pattishall, Wittering, and other churches. As to the relative date of these buildings, it is impossible in our present state of knowledge to make any positive statement. It will be noticed, however, that in all we find certain details which are distinctively of a Saxon type, and that we are not met, as in the case of the so-called Saxon towers of Lincolnshire, by features which seem to be derived from a foreign source.

In addition to the remains of churches to which a pre-Conquest date may fairly be attributed, there are a certain number of that type which is earlier than the twelfth century, but has none of those features which are specially Saxon.

Of the simplest type of Norman church plan, the plan with an aisleless nave and a rectangular or apsidal chancel, Northamptonshire has hardly any unaltered examples. The small chapel of Sutton Bassett, in the parish of Weston-by-Welland, is the only example which I can recall at the moment of writing this: it has a rectangular chancel, and has been subjected to much alteration. So much rebuilding went on during the thirteenth and fourteenth centuries that in this part of the country a large amount of Norman work was swept away. Churches with twelfth-century arcades are rarely found, and it is only here or there, as at Whittlebury, near Towcester, or at Wakerley, in the north of the county, that a twelfth-century chancel arch survives.

In Northampton itself, however, the walls and columns of the circular nave of St. Sepulchre's are of the early part of the twelfth century, while a considerable amount of the old walls of the aisleless choir are left above the arcades. The lower part of the tower of St. Giles's, though partly rebuilt, may be assigned to the early part of the century, while the arcades of St. Peter's, with their unusually rich sculpture, appear to belong to a few years later. Of these three churches, two, St. Sepulchre's and St. Peter's, have uncommon and exceptional plans. St. Giles's, on the other hand, has kept from first to last its transeptal plan with a tower over the crossing. The cruciform outline of the church was practically absorbed before the end of the Middle Ages by the addition of wide aisles to the nave and chapels to the chancel, but the central tower above the crossing remained. Now, a church with a central tower is as great a rarity in Northamptonshire as a church with an aisleless nave and chancel. Putting Peterborough, the one church of the first class which is left standing in the county out of the question, there remain only five churches of any importance, so far as I remember, that have central towers. They are at Castor, near Peterborough; St. Giles's, Northampton; Duston, Weedon Lois, and Barton Seagrave.

But although there are so few existing examples of a plan with a central tower, there are, on the other hand, several churches where the original existence of such a plan is indicated, either by the persistence of the transeptal element in the plan or by signs which point to the destruction or absorption of transepts during the later Middle Ages. There was undoubtedly a tendency of the later mediæval builders to absorb early transepts within widened aisles, and the probability is high that, where we find transepts, with or without a central tower, those transepts are not likely to be the additions of an age which had other and more convenient methods of enlarging its churches. The influence of the transept, whether it was retained or obliterated, was great upon the ultimate plan of the church. This fact can be studied to advantage in churches so well known and so apparently different on plan as Burford, Cirencester, or St. Mary's, Shrewsbury; it is constantly exemplified in village churches such as the fine churches of Arksey, Campsall and Hatfield, near Doncaster. Now, of the churches which are included in the programme of our meeting, a large number—possibly, if we knew the truth, the majority—were originally planned with transepts and probably with central towers. Of the twenty-six, five, including Brixworth and Earl's Barton, have western towers which existed in whole or in part as early as the twelfth century. These churches had no central tower, so far as can be ascertained. Eighteen have western towers which appear to be additions to the original plan. In this category is included the exceptional case of St. Sepulchre's, Northampton. Of the other seventeen there are seven cases in which a transeptal plan may be postulated with some degree of certainty; three in which a western tower has been added to a simple aisleless plan without transepts, and seven as to which a decision is difficult; but two of which, Holdenby and Cogenhoe, probably belong to the class of rebuilt and enlarged non-cruciform churches. Three more complete the twenty-six. St. Giles's, Northampton, our one example with a central tower remaining; Fotheringhay, entirely of the fifteenth century, so that we have nothing left of the older and probably smaller nave of the church; and Canons Ashby, the fragment of a priory church of Austin Canons, the plan of which falls in a different category from those of parish churches.

To the eight churches—nearly a third of the number—in which we have thus found traces of a plan with transepts and probably with a central tower may be added several other examples from other parts of the county. There are numerous instances in which the existence of a broad south or north aisle or two broad aisles may have been the result of taking the length of the transept for the width of the aisle.

I already have referred to the unusual occurrence of Norman arcades in Northamptonshire churches. Out of sixty-

three churches described in the well-known "Architectural Notices of the Churches of the Archdeaconry of Northampton" only three possess arcades of this date, and in no single case of these three are the whole of the nave arcades of one building. At Spratton, where there is a beautiful late twelfth-century north arcade, the south arcade is of the middle of the thirteenth century. This does not prove that aisles were not added to many of these churches during the twelfth century. But it indicates that during the later part of the thirteenth and early part of the fourteenth century much of this work must have been removed as capable of being improved upon.

In the fenland district, where much fine work was done in the early part of the twelfth century, and where masons were fully as active during the thirteenth and fourteenth centuries as in the Nene valley, there was not in the later period so wholesale a destruction of the work of an earlier date. Such churches as Long Sutton, Walsoken, and Whaplode widened their aisles, but left their old arcades practically untouched.

It does not necessarily follow that the quality of twelfth-century workmanship in Northamptonshire was inferior; the capitals of St. Peter's, Northampton, reach a high level of excellence in their special type of sculpture, while the doorways at Earl's Barton, Castle Ashby, and the porch at Great Addington are carved with great elaborateness and refinement. But it is possible that some Norman arcades were low and stunted, as they are to-day at Gretton, and were ill-suited to the lofty and well-lighted aisles which it now became the fashion to design. At any rate, when Tansor Church was enlarged in the thirteenth century the unusually tall twelfth-century arcades, with their lofty and slender columns, were left, and their proportion was generally followed by the eastward additions now made to them, and this in spite of the fact that the retention of the old work set the builders a difficult problem in planning the new. Tansor and Warmington appear to have set a local fashion of tall arcades with slender cylindrical supports.

(To be concluded.)

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

II.—PLANS.—VAULTING.—TRIFORIA.—CLERESTORIES.—COLUMNS.

(Continued from page 95.)

ONE of the most graceful conceptions of the fourteenth-century architect in Italy is the triforium in the nave of Lucca Cathedral. Of unusual loftiness, it is continued, as at Pisa, across the entrance to either transept, and with extremely fine effect. Each bay contains two windows of three Pointed compartments trefoiled, and these windows light the passage formed between the groined roofs of the aisles and the raftered lean-to ones. The comprising arches of these windows are semicircular, and contain exquisitely beautiful traceries formed by filling the spaces between intersecting mullions with foliated circles, as in the Campo Santo at Pisa.

At Lucca, the triforium, which is returned with captivating effect across the west end of the nave, is everything, the clerestory windows being merely circles filled with tracery of varying character, and of the greatest beauty and refinement. These circles pierce the space just below the wall-ribs of the richly decorated four-celled vaulting.

Florence, Orvieto, and Siena Cathedrals, as well as Sta Croce in the first-named, are destitute of triforia, but the clerestory at Orvieto, Siena, and Sta Croce is very finely developed, and rises directly from the string course above the arcades, but in none of these cases is it possible to institute any comparison between them and the corresponding parts of English churches without entirely condemning the Italian designs.

At Orvieto a peculiar feature in the elevation of the nave is a species of quasi-triforium—namely, a gallery above the pier arches, defended by a pierced parapet, and returned in the form of a much loftier covered gallery across the west end of the nave; while at Sta Croce an iron balcony, curiously prolonged over the arches opening into the transepts, answers the same purpose.

If we go to the exteriors of Italian Gothic churches we shall find the same dissimilarity to northern buildings; an almost entire absence of buttresses, and in their place pilasters, round which the strongly-marked string courses and cornices are returned in a way curiously different from the practice of cis-Alpine architects.

At Siena there are huge cross-walls instead of flying-buttresses, and at San Francesco, Assisi, large round masses of masonry clumsily tiled at the top, and which at first sight might be taken for miniature apses. The aisleless church of Sta Chiara in the same city, with its Angevine-like interior, has some of the largest flying buttresses to be seen anywhere, built against the north wall of the nave, which, if somewhat ungainly, are not altogether devoid of picturesqueness. But as a rule flying buttresses are dispensed with, even in the loftiest buildings.

Then, again, no mediæval Italian architect seems ever to have hesitated a moment about any amount of sham construction; and we must go to Italy prepared to accept sham gables and iron ties in all directions, as very important and regular features, in place of the rigid truthfulness which so honourably marks our own ancient architecture. The roofs, too, are almost invariably of flat pitch, though this is not of much importance, as they were thus best suited to the nature of the climate. But the Italian, deficient in the true Gothic spirit, and afraid of a bold confession of the truth, not infrequently attempted, as at Siena, Orvieto, and the Capella della Spina, at Pisa, to conceal this fact by the addition of sham fronts and gables of extreme unreality and, in some instances, of great unsightliness.

In the treatment of architectural mouldings the same likeness to Classic work is seen in Italian examples. They are generally thin reedy arrangements of hollows and fillets, with very little variety of contour, and it is rarely that any care is taken to fit them for the place they have to occupy. In the Pisan examples, for instance, we generally see a nearly similar section in the jamb and arch, but between them is inserted a capital of considerable size and great projection, for which there is no possible use, and quite fails (as do the majority of Italian capitals) in performing the function so carefully attended to in all northern work, of gathering together the arch-mouldings and transmitting them through the bearing shafts to the ground. It should be said, however, that the Italians had a leaning towards sharp lines of shadow, and with a sun such as that which generally lights up their walls they could well afford to neglect the kind of mouldings in which our ancestors indulged, perhaps to excess.

In all these respects, therefore, the feeling exhibited by the mediæval Italian architects was more like that of their Classic forerunners than that of the contemporary artists of England and France, and of this we are constantly reminded in examining their works.

We may now pass to the consideration of a very interesting and important feature—the feature, in fact, which may be said to stamp an ecclesiastical interior with an individual character—the column.

The isolated or detached column is one great and lasting beauty derived from Classic examples in Italy. The people of that country, finding it used in their Classic and Byzantine buildings, persevered in its use from the earliest Romanesque period, through the whole of the Pointed Gothic, down to the Cinque Cento, after which, under the sway of the Roman Classical, it fell into comparative desuetude.

It is true that, as time rolled on, there was a less free use of it in Central Italy, but it was never entirely ignored. We cannot say as much for our ancestors. So long as the influence of Italian art is visible in French, German, and English Gothic, so long the isolated column was used, and just in proportion as that influence decreased, so did the frequency of its use decrease.

Among the exceptions to the use of the circular column, so prevalent in the churches of Genoa, Pisa, Lucca, Prato, and Pistoja, may be mentioned Lucca and Florence cathedrals, where they are angular masses of complex form; Perugia Cathedral, a building of the German "hall" type, with aisles as high as the nave, where they are tall octagonal ones; Sta Croce, at Florence, where they are octagons, but of more massive proportions; and Siena Cathedral, in which the black and white marble columns dividing the nave and choir from their aisles are composed of a cylinder surrounded by four slender shafts, of which that facing the nave is carried up through the white marble capital to the string-course below the clerestory windows, with an effect which can hardly be called successful. Nor does it appear

to be of any use further, as it has nothing to do with the transverse arches of the vaulting.

The magnificent clusters of shafts at the west end of the nave of Genoa Cathedral have already been described.

Of columns composed of shafts attached to piers, three examples may be mentioned. In the fine Pointed Gothic cathedral of San Donato at Arezzo their plan is half-octagonal shafts at the cardinal points of the pier, divided by the leaves of a large quatrefoil. The bases are banded and finely moulded; the octagonal subshafts have capitals of an almost Classical character, under a square abacus; and the longitudinal arches are obtusely pointed. The vaulting shafts rise, uninterrupted by the lower capitals, to a higher level, where their capitals are connected by a horizontal string.

At Sta Maria Novella, Florence, where the arches diminish in width from west to east—a device probably meant to give an effect of increased length, as in the choir of Canterbury and the nave of Chartres—the piers are alternately different. Their plans are four half-circles set on a square, with the intervening edges of the square cut into semi-octagonal nook-shafts, alternating with a square left plain on its north and south faces, and having on the two others a half-circle between two smaller nook-shafts. They all have a banded base, of two rolls divided by a quirked hollow, set on rectangular stilted plinths, with their angles scooped off.

(To be continued.)

ROYAL INSTITUTE OF BRITISH ARCHITECTS. HUDDERSFIELD TOWN PLANNING COMPETITION.

THE Secretary of the Royal Institute of British Architects desires us to state, for the information of Members and Licentiates, that the Competition Committee are in communication with the promoters of the above competition with a view to the amendment of the conditions.

COMPETITION FOR CONSTABLES' HOUSES, AYR.

MEMBERS and Licentiates of the Royal Institute of British Architects are informed that this competition has been vetoed by the Glasgow Institute of Architects on account of the unsatisfactory nature of the conditions.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Garden Cities.

SIR,—During the past few days a paragraph has gone the round of the Press, under the heading of "A New Garden City," stating that a new garden city is being started at Dorecourt, and the details given show that on fourteen acres of land ninety houses are to be built.

May I again be allowed to point out what a garden city really is? After thirteen years of propaganda by the Garden Cities and Town Planning Association, it might have been supposed that the term "Garden City" was tolerably familiar, and that its real meaning was understood by all thinking people taking any interest in social matters. As the appearance of the above-mentioned paragraph this week and scores of similar instances during the year show that there is still a good deal of misunderstanding, might I be allowed to define the essentials of a garden city as distinct from a garden suburb and from ordinary development? They may be stated as follows:—

1. That before a sod is cut or a brick is laid the town must in its broad outlines be properly planned with an eye to the convenience of the community as a whole, the preservation of natural beauties, the securing of the utmost degree of healthfulness, and proper regard to communication with the surrounding district.

2. That in the town area the number of houses should be strictly limited, so that every dwelling should have ample light and air, with a suitable garden, and that public recreation ground and open space should be provided generously.

3. That the town area should for ever be surrounded by a belt of agricultural and park land, so that while in the centre the urban problem is being dealt with, the rural portion, which should be the larger part of the estate, may be avail-

able for farms and small holdings, in order that the small-holder and market-gardener may have a new market direct to hand for the sale of produce.

4. That the return on capital should be limited to, say, 5 per cent., any profit above that amount being applied to the estate itself for the benefit of the community.

5. That the town should be not merely residential, but also commercial and industrial, that provision should exist for taking the worker and his work away from the crowded centres into the fresh air of the country district, where not only should the land be cheaply obtainable for the employer, but the worker should have a comfortable cottage at a convenient distance from his labour.

It is therefore essential that the land should be of considerable area, and its development should be in the hands of one controlling body, which, in Mr. Howard's scheme, should have for its ultimate object not the making of huge profits, but the improvement of the conditions of life for all who live on the area. The estate should be somewhere from six to ten square miles in area, and in order to give effect to the desire for the combination of town and country about two-thirds should be reserved for the rural area.

It will, therefore, be seen at once how absurd is the designation "Garden City" when applied to fourteen acres of land.

A "Garden Suburb" provides that the normal growth of existing cities shall be on healthy lines; and, when such cities are not already too large, such suburbs are most useful, and even in the case of overgrown London they may be, though on the other hand they tend to drive the country yet further afield, and do not deal with the root evil—rural depopulation.

"Garden Villages," such as Bournville and Port Sunlight, are garden cities in miniature, but depend upon some neighbouring city for water, light and drainage; they have not the valuable provision of a protective belt, and are usually the centre of one great industry only.

The garden city, therefore, stands as the preventive, not as the palliative.

I should be glad to forward further information to any of your readers who may desire it, and I beg to thank you for the opportunity of warning your readers against proposals which claim the name of "Garden City" but possess none of its essentials.—Yours faithfully,

EWART G. CULPIN,

Secretary The Garden Cities and Town Planning Association.

August 14, 1912.

An Old Fire Patent.

SIR,—In view of the interesting weekly series of patents, &c., appearing in your columns, the accompanying may prove attractive, dating back, as it does, over two and a half centuries.

The original broadsheet is in the British Museum, where I came across it some time ago in searching for other matter. I think, Sir, that architects will be very much interested, too, in the new building block described and illustrated in this week's issue of your most interesting journal.—Faithfully yours,

August 12, 1912.

PERCY L. MARKS.

BROADSHEET.

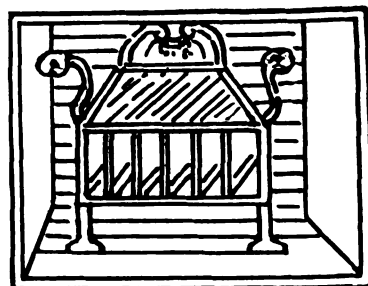
Artificial Fire, or Coale for Rich and Poore.

This being the offer of an Excellent new Invention by Mr. Richard Gosling, Engineer (late deceased), but now thought fit to be put in practice.

Read. Practice. Judge.

A method of artificial coals by a compound of clay, small seacoal, sawdust, and chopped straw made into bricks or fire balls.

Greenwich Heath or Hounslow Heath turf is very good fewell.



London. Printed for Richard Cotes for Michael Spark, senior. 1644.

The Architect.

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FORTHCOMING EVENTS.

- Saturday, August 31.*
 The Institute of Sanitary Engineers : Visit to Leighton Buzzard, Linslade Urban District Council Pumping Station, and Ascott House.
- Monday, September 2.*
 Northern Architectural Association : Students' Sketching Club.
- Wednesday, September 4.*
 British Association Annual Meeting, Dundee (September 4-11).
- Saturday, September 7.*
 Architectural Association Camera, Sketch, and Debate Club : Walking Expedition, start at Dorking.
 The Institute of Sanitary Engineers : Visit to Central London Railway Power Station, Shepherd's Bush.

THE CATHEDRALS AND CHURCHES OF ROME AND SOUTHERN ITALY.

It is perhaps not altogether clear why the cathedrals and churches of Rome should be joined in any connection with those of Southern Italy, except that in the neighbourhood of Rome there must necessarily be the effects of Roman influence on the architecture of the churches in its neighbourhood, and it is only as we get away from Rome that specialities of the features that mark the churches and cathedrals of Southern Italy become more marked.

It has, however, apparently been a matter of convenience for Mr. Francis Bumpus to link together Rome and Southern Italy, partly, no doubt, because his treatment of the churches of the South is rather in the nature of an introduction than a complete essay, and therefore it does not extend to sufficient length to form more than an appendix to the bulk of his volume. The greater part of the latest book * by Mr. Bumpus deals with the cathedrals and churches of Rome. Of these Mr. Bumpus has discoursed in his usual thorough and attractive fashion.

Mr. Bumpus briefly alludes to the catacombs as the earliest places of Christian worship, and the chambers in the houses of the wealthy Christians as the earliest churches, and then explains the adoption of the basilican form of plan for churches erected on the full emancipation of the Christians at the beginning of the fourth century under Constantine. He, however, goes a little further than most, and suggests that the seven great basilican churches built by Constantine were probably all law courts originally.

The method which Mr. Bumpus has adopted in the treatment of Rome is first of all an epitome or classification of the several churches which show similarity of treatment in regard to features of composition or plan or are related in date; thus, in dealing with mediæval work he groups together the churches which have campanili or belfries, of which he says, "there are forty in the city rising conspicuously in square towers of brick-work, mostly adorned with inlaid crosses and discs of porphyry and bright green and yellow earthenware, and divided by cornices (the loftier by seven such) and marble or terra-cotta corbels, between which are open arcade-windows with marble colonnettes of various sizes, whose heavy and barbaric capitals are also various."

Another subject which forms an opportunity for classification is that of orientation, which Mr. Bumpus considers is in Rome a question of great interest.

The true cause of the departure in the planning of Roman churches from strict orientation is no doubt that suggested by Mr. Bumpus, that many of the most ancient

churches will be found to lie parallel with or at right angles to existing streets which we know to occupy the same direction as in ancient Rome.

There were, of course, occasions, as at St. Peter's and the Lateran, in which the builders had a free hand, and in those instances in Rome the basilicas were usually made to orientate west, while their altars orientate east, that is, the orientation of the altar was preferred to that of the church.

Other special peculiarities under which the churches of Rome are classified by our author are the simple basilican plan with a nave and aisles on either side and an apse; then those with the transept between the apse and the nave with its two aisles, not, however, extending beyond the breadth of the latter, so that the building appears as a parallelogram on plan; following these we have basilicas in which the transept projects, or has been extended, beyond the breadth of the aisles. Basilicas without aisles, round or octagonal churches, basilicas which have entablatures instead of arches upon their lateral columns, churches with an atrium or a confessional crypt, all of these form qualifications under which Mr. Bumpus has grouped the churches of Rome. He then proceeds with a detailed description of several of the more important basilican cathedrals and churches. These are St. Peter's, San Giovanni Laterano, San Giovanni in Fonte, Sta Maria Maggiore, San Paolo fuori le Mura, San Clemente, Sta Agnese fuori le Mura, SS. Quattro Coronati, Sta Maria in Trastevere, Sta Prassede, Sta Maria in Cosmedin, Sta Maria sopra Minerva.

He afterwards follows with a description of the more prominent Renaissance churches of Rome, namely: Sta Agnese, Piazzini Navona; Sant' Andrea della Valle, Sant' Ignazio, Il Gesu, Sta Maria in Vallicella, Sta Maria degli Angeli.

In dealing with St. Peter's Mr. Bumpus is both descriptive and critical, and takes the view, which is probably right, that Bramante's original design was very much finer than anything afterwards projected or executed, but he also holds the opinion that Michel Angelo's design was superior to the church as carried out. For the interior he has the highest admiration, and he says, "Internally St. Peter's is not only grand, beautiful and vast—it is absolutely sublime."

In speaking of the colour decoration of the interior Mr. Bumpus makes a digression to emphasise, as cannot too often be done, the fact that the mediæval churches of Europe were in their prime masterpieces of colour, and not, as it is the fashion nowadays to regard them in their present bare and cold clothing of native stone, works in monotone.

San Giovanni Laterano, as the primordial cathedral of Rome, comes next to St. Peter's in the author's description, and very fully he has recounted its history, its vicissitudes and its magnificences. San Giovanni in Fonte is but the baptistery of the Lateran, commonly

* *The Cathedrals and Churches of Rome and Southern Italy.* By T. Francis Bumpus. Forty-two illustrations. (London: T. Werner Laurie, 16s.)

known as the baptistery of Constantine, although that Emperor was not there baptized.

Sta Maria Maggiore best preserves of all Rome's ancient basilicas all the essential features of the ancient Romanesque, although nothing of its early character is visible externally by reason of the additions and encrustations made chiefly in the sixteenth, seventeenth, and eighteenth centuries. Much if not most of this is of excellent character and detail, although Mr. Bumpus does not consider it quite satisfactory.

San Paolo fuori de Mura is now, though magnificent and stately, no longer a record of the past, for the disastrous fire of 1823 necessitated the entire rebuilding, or rather replacement, of the old monument of the earliest ages of Christianity by what our author stigmatises as a huge Pagan temple in a variety of the Classical style prevalent at the beginning of the last century. The beautiful cloisters and some valuable adjuncts saved from the conflagration give Mr. Bumpus an opportunity for exultation.

Of these great churches and of the other basilicas of which our author discourses at length he gives to his readers a charming picture of their history, their legends, their beauties, architectural, pictorial and plastic, that renders his book an invaluable aid to those who would intelligently appreciate the basilican churches of Rome.

Turning now to the churches of the Renaissance period in Rome, we find that Mr. Bumpus defends himself from "the entirely undeserved reputation of being a blind admirer of everything Northern and Mediæval," and shows that whilst he appreciates the excellences of Gothic architecture at their full value, he is broad-minded enough to recognise the merits and keenly critical enough to note the demerits of the Renaissance work also. He combats the assumption of Pugin that the Pointed style is Christian and all other Pagan, and puts it very neatly that "it is not easy to understand how strictly architectural forms can be invested with a theological character." Of several of the leading architects of the Renaissance in Italy we have a thumb-nail character sketch which shows correct appreciation. The account that Mr. Bumpus gives, however, of the Renaissance churches he describes is but short. He has not lavished upon them the fecundity of fact that he has bestowed upon the basilicas.

The cathedrals of Southern Italy are described by Mr. Bumpus briefly and tersely, and introduce us to a fascinating study of the several influences of Lombard, Saracen, Norman and Greek upon the peculiar development of mediæval architecture that is to be found in the province of Apulia and the other parts of Southern Italy. We should have liked to have heard more from Mr. Bumpus of the churches of this district, but recognise that there is a limit to the size of a volume, and we cannot complain that we have not a full measure of interest and information in the latest book with which Mr. Bumpus has enriched the literature of architecture, pleasantly instructive and full of much erudition and painstaking research set out by an able critic.

THE ARCHITECTURAL ASSOCIATION. FORTY-THIRD ANNUAL EXCURSION.— SHREWSBURY.

Illustrated from sketches by Mr. P. CAET DE LA FONTAINE.
(Concluded from last week.)

Thursday, August 15.

An early start by train was made for

STOKESAY,

which we reached after a good half-mile walk from Craven Arms Station. The first thing that impressed us on reaching the castle is its delightfully picturesque grouping—the castle, gatehouse, and church, form together an almost ideal group of harmonious buildings, each retaining a certain distinctive charm, yet blending admirably together to form the larger whole.

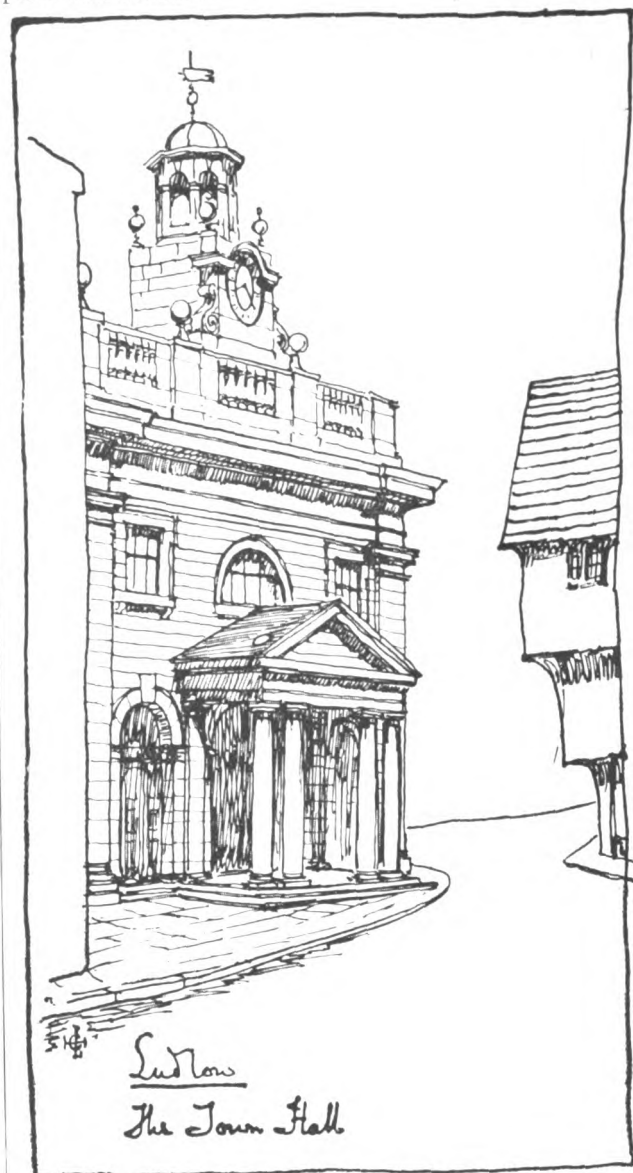
Next one observes the beautiful colour of the stone work: a rich yellow, tinted with browns and greens for the most part, though in exposed positions (as in the stone slated roof) a purple shade is noticeable. The oakwork of the half-

timbered gatehouse, too, is not of the everlasting "black and white" variety, but has weathered a lovely silver-grey shade. The castle—which should be more correctly described as a fortified manor house—is of various dates: the earliest portion would appear to be the north tower (1215), which is now entered from the banqueting hall by a solid oak stair. In 1240 the great hall was added, together with the retiring-room, or solar, at its southern end, to which access is given by a flight of external stone steps.

The south tower was built about 1290, and in 1291 Laurence de Ludlow received permission to "strengthen his mansion at Stokesay with a wall of stone and lime" and to crenellate it."

The entrance to the inner court is under the beautiful Elizabethan half-timbered gatehouse mentioned above; this is a two-storeyed building, the lower part being divided into two halves by the entrance way: the stout oaken door to this still remains *in situ*. In the spandrels over the archway are quaint carvings of Adam and Eve in the garden of Eden, and heads, scrolls, &c.

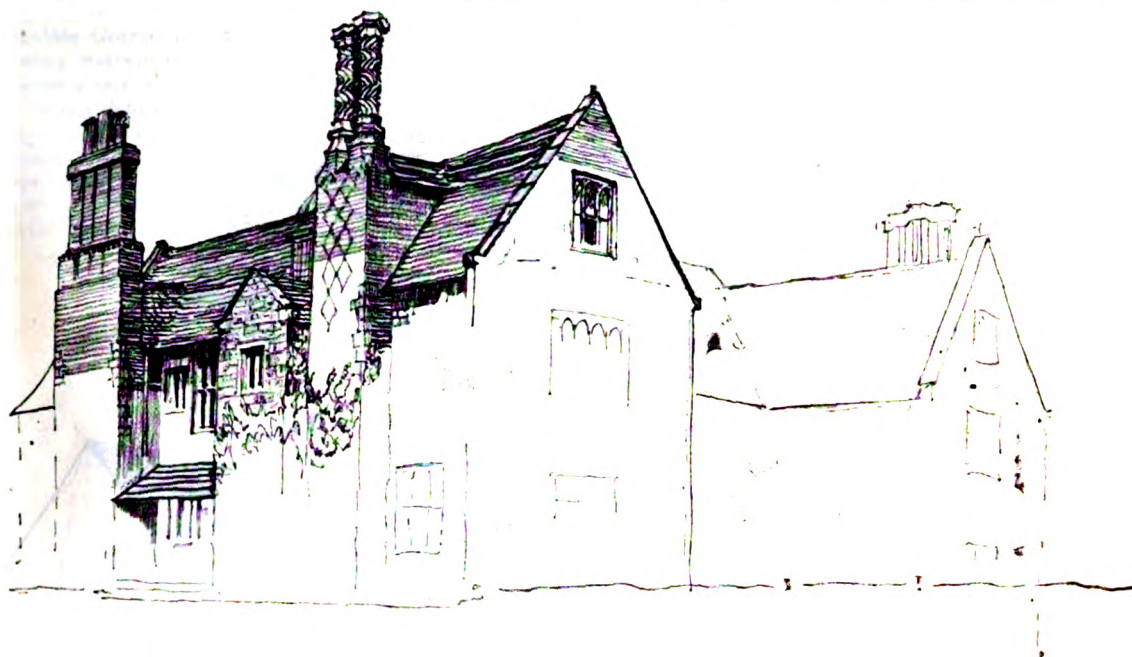
The windows are glazed in small diamond-shaped panes of leaded glass, and a good deal of the original glazing appears still to exist.



We were particularly struck by the ingenious manner in which the valleys to the stone-slated roofs are worked, more especially in the main building.

Seen from inside, the roof has the usual large valley rafter, but, in front of this and tight up to the under side of the roof are two smaller rafters, about a foot apart, carrying the slates in the valley, which are at an angle of 45° to the two intersecting lines of roofs. These slates are smaller than those of the main roof, but are cleverly arranged to gauge with them, and are only just tucked in at the angles. The method seems very effective, as we did not find a single place where the rain had come through.

Stokesay has recently been so often described and measured—a framed "sun print" hangs in the north tower—that we do not propose to say any more about it here.



PLAISH HALL.

The church of St. John the Baptist close by was badly injured at the time of the Civil War, and was practically rebuilt in 1654, but has a Norman door on the south side. The small tower groups up well with the surroundings. One of our most ardent sketchers took up a rather perilous position on the angle of the parapet of this tower, and we were amused to note that, later, he appeared (in a sketch-book belonging to another member) as a pinnacle.

After an excellent lunch at the Stokesay Castle Inn, we made our way to Craven Arms Station, and entrained for

LUDLOW,

the next place visited, and here we spent the remainder of the afternoon; even then we should have found our time all too short had it not been for the fact that the rain came down too heavily to permit of sketching towards the end of the day.

But we were fortunate in having almost a glimpse of sunshine once or twice during our stay.

The church of St. Laurence first claimed our attention; the well proportioned tower of more than usual height is a landmark for twenty miles or so round Ludlow.

In his "Antiquities of Shropshire," the Rev. R. W. Eyton says there are reasons for believing the church at Ludlow was originally dependent on Bromfield, and was founded at least one hundred and fifty years previous to the Domesday survey. The church now consists of a chancel of four bays, which in spite of a long and eventful history, has the appearance of being entirely in the Perpendicular manner. There is a double vestry to the north of this chancel, and chapels on either side of the first bay. Westward are the tower over the "crossing"; north and south transepts, and a well-proportioned nave and aisles of six bays—which again give the Perpendicular effect, although the outer walls and windows are of much earlier date.

The windows in the chancel contain glass of very good design, especially the large nine-light east window, where scenes from the life of St. Laurence are depicted. From an inscription forming part of the design this appears to have been executed about 1450. There is also a "low side-window" in the eastern wall here, which is an unusual position.

In the north wall is a rather battered Easter sepulchre, beneath which is placed the tomb of Sir Robert Townshend, Chief Justice of the Marches of Wales and Chester, and Alice his wife; figures of six sons and six daughters also form part of the monument, which is in the Classic style, with just a trace of Perpendicular feeling here and there in the details.

Nearly opposite, in the south wall, is a monument, decorated with excellently designed shields containing armorial bearings; it commemorates Lady Ambrosia Sydney, daughter of Sir Henry Sydney, who died in Ludlow Castle in 1574.

Another good tomb here is that of Edmund Walter, "Chief Justice of the three shires in South Wales and one of His Majesty's Council in the Marches of Wales," and Mary his wife, which bears the date 1592.

The choir stalls are finely carved, and the "miserere" seats curious.

Both nave and chancel have fine panelled oak roofs with carved and coloured bosses, &c.

The hexagonal south porch is a fine example of the "Decorated" period, and it is interesting to note that this was taken down and rebuilt without alteration in the fifteenth century; this is proved by the discovery of fragments of fourteenth-century glass between the vousoirs of the ribs of the sexpartite vaulting, and a string course with Perpendicular section in the lower part.

An excellent and detailed description of this fine church will be found in Cranage's "Architectural Account of the Churches of Shropshire."

A visit was next paid to the castle, and we noticed, by the way, several interesting old houses. The town hall has rather a good early Renaissance front, with a well-proportioned bell turret, and a Doric portico over the main entrance, of which we give a sketch.

The next item on our programme was a visit to Ludford "hospital, manor, and church." This proved disappointing: the lady of the manor did not receive the party with any show of hospitality, and a somewhat cursory inspection of the rooms which we were allowed to visit revealed a charming plaster ceiling and some good brass and pewter. The adjacent church had nothing of particular interest to recommend it to the sketchers, but we noticed a good bay window in half timber and stone on this side of the house.

A well-restored little half-timber building near by, once the Bell Inn, was certainly worth the slight *détour* we made to examine it. A charming little porch in oak, dated 1614, with turned balusters and a stone-slatted roof, gave a distinctive note to the building.

We recrossed the river by the massive old stone bridge, and paused a moment to admire a picturesque view of Ludlow, with the wide and steeply rising street leading to the old town gate forming an effective foreground to the picture.

The weather being rather too moist for further sketching, we repaired to the famous Feathers Inn for tea.

The large room on the first floor here has a splendid ceiling and a fireplace with Jacobean panelling, &c.

In the room below is another fine fireplace, with a vigorously carved and coloured coat of arms.

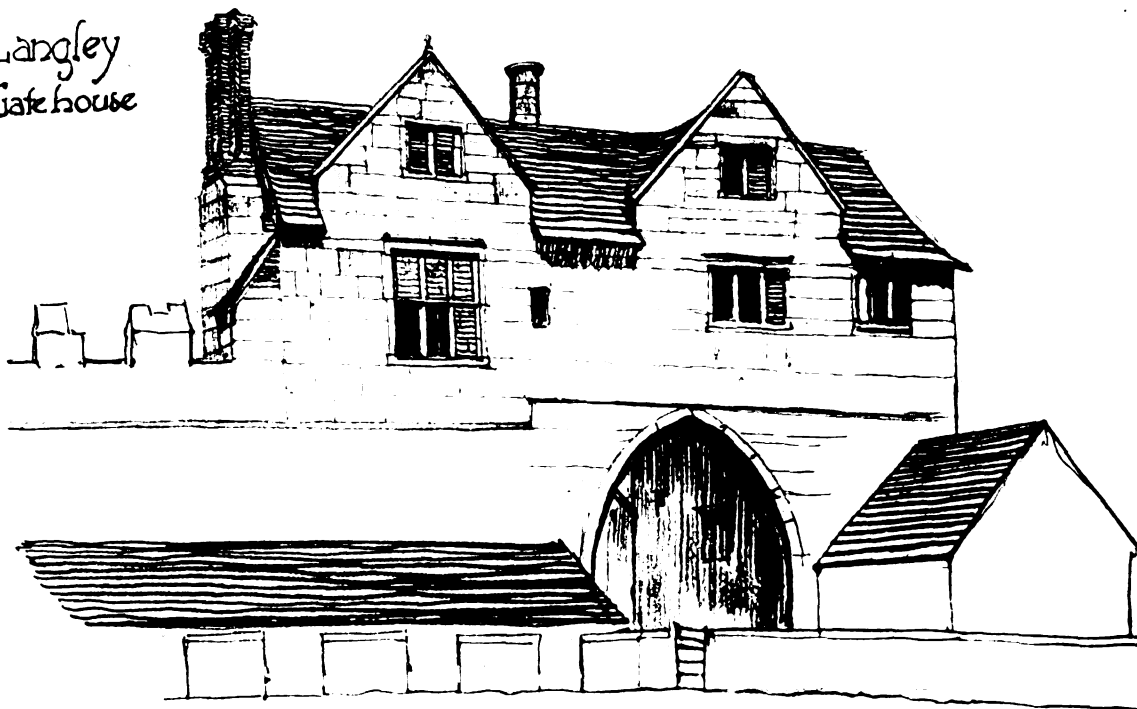
Externally, the inn is one of the best examples of half-timber work in the town, and is richly ornamented with carving. We regret the varnish and white paint, which gives a "black and white" effect certainly—as required by our American friends—but also produces a "sticky" appearance which is not pleasing.

Friday, August 16.

Owing to the omission of our chauffeur to call for the luncheon basket for the party, we started half an hour late, and a threatened breakdown of the motor after a stiff climb still further added to our delay in reaching

PLAISH HALL,

a fine brick and stone Tudor building, probably built by William Leyghon (1607), whose elaborate monument is at

Langley
Gatehouse

Cardington Church. He was Chief Justice of Wales. Plashe, or Plaish, was "licensed" in 1520, but the work now existing is of somewhat later date.

We have here a variant on the popular \sqcap shaped plan, the two wings extending beyond the main block giving an H form. The main block contains the hall, with a fine open timber roof, a minstrels' gallery, and screen.

The house faces south-east, and in the eastern wing is a fine panelled room with rich carving, for which we had not time for more than a glance. Another room has good panelling and plasterwork, and the two circular staircases with solid oak treads in the angles of the original entrance-front should be mentioned.

The chimneys in cut brick of varied design have a quaint—but rather mythical—story attached to them.

It is said they were executed by a criminal who was to be condemned to death by hanging; the unfortunate man endeavoured to escape the penalty by promising Judge Leygton that he would build such chimneys to his house as had never yet been seen, or should the like be built again. He built the chimneys, but was hanged. The Judge thus both satisfied justice and made it impossible for another house to have such chimneys. A sun-dial with the following curious inscription stands in the well-kept garden:—

"Serene he stands among the flowers
And only marks life's sunny hours.
For him dark days do not exist,
The brazen faced old optimist."

A punctual start was decreed, in spite of unfinished sketches, and a half-hour's run brought us to

PREEN MANOR,

an early house by Mr. R. Norman Shaw, designed and built in 1870-72.

It is a fine house, with tall brick chimney stacks and many gables—treated with great ability in the local black and white style, although we believe the half-timbering is only about 1 in. thick.

The lower portions are in brick with stone dressings, notably the vigorously designed arch of the main entrance door.

Before entering the house we inspected the little chapel which adjoins it at the end of the northern wing.

Preen Church dates from the second half of the thirteenth century, but the eastern part is probably earlier, as it was the chapel of a Cluniac cell of Wenlock; the western part was parochial. It is quite a small place, the internal measurements being 69 ft. long by 12 ft. 9 in. wide, a rather surprising proportion, which, however, gives a satisfactory effect and provides seating accommodation for about 100.

There is a curious "low side window" in the north wall, with traces of staples and rebates for a shutter below the transome. All the windows are simple lancets, and there is a simple open roof, consisting of rafters and collars, the plate being at about 15 ft. from the floor level. The church

contains a wooden pulpit dated 1646, and some good incised stone slab monuments.

We lunched in the fine dining-room of the house—which is now unoccupied. All the principal rooms are on the first floor owing to the slope of the ground, which transforms part of the lower floor into a basement.

The wide stone staircase leads to a large upper hall in the centre of the house; the oak stair to the bedroom floor starts immediately opposite, and grouped round are the dining-room, drawing-room, boudoir, and smoking-room; this last opens on to the upper terrace, some 350 ft. long by 22 ft. wide, a fine walk with a wide path and green lawns; to the north-west a high brick and stone wall gives protection to a long bed of flowers and creepers.

Below is another terrace about 250 ft. in length, and a well-planned formal garden with shrubs and fountains about 50 ft. wide extends to the south as far as the shubbery at the end of the lower terrace.

A short drive through pretty country brought us to

LANGLEY,

where, incorporated in some farm buildings of no particular interest, is a fine bit of ashlar stonework in a gatehouse of the late fourteenth century, with two gables, and a portion of an embattled wall adjacent to it on one side. The kneelers in the small gables are remarkably large stones for this district, and the large archway is curious in having no hooding or weather moulding.

The roof is as usual covered with local stone slates.

The outer front is of half-timbering and of later date.

Some members visited the small chapel, which lies about a hundred yards to the north-west. It is in a deplorably neglected condition, and is now used as a fowl-house.

The date on one of the roof principals is 1601, and remains of modelled plasterwork and moulded rafters, together with some delightful pews of about the middle of the seventeenth century, show that it must have been worth preserving in a better manner than is now unfortunately the case.

From Langley a short drive brought us to

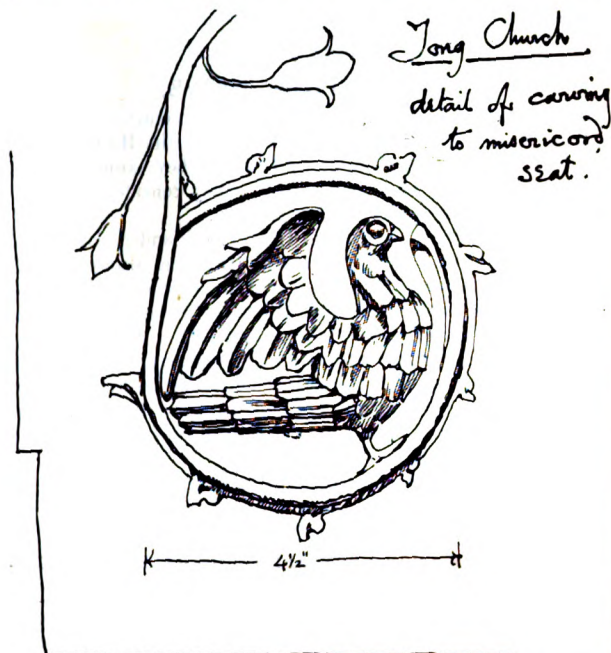
PITCHFORD,

where we visited the hall and small church near by. Pitchford derives its name from a bituminous well near the hall.

This, the finest example of half-timber work in the county, was built in 1473 by William Ottley, Sheriff of Shropshire, whose descendants continued to reside here until 1807, when it came into the possession of Lord Liverpool, whose daughter, Lady Louisa Cotes, was the mother of Lieut.-Colonel Cotes, the present owner.

The building follows the typical \sqcap shaped plan, consisting of a central block and two long wings of equal length terminating in slightly overhanging half-timbered gables. In the centre of the main block a projecting gable of rather more ornate character, and containing a clock in its upper part, marks the original entrance. Similar projecting gables are placed in the angles, where the two wings join the

main block. This main block was extended under the direction of the late George Devey to the north-west to form a servants' wing, containing kitchens and domestic offices, and has been carried out with excellent discernment. It would be difficult to say definitely where the work started, save for some marks of a circular saw on the timber framing. This addition gives to the present entrance front a tremendous appearance of length, happily punctuated by the large projecting chimney stacks with their strong vertical lines of plain diamond shafts. The general effect is very pleasing.



Internally, the house is of much later date, and the panelling, &c., mostly dates from Jacobean times; in the room over the present library is the entrance to a secret chamber and exit from the house, which is cleverly contrived without the use of any iron lock or latch by means of a sliding rail in the panelling.

A fine, and we should imagine almost unrivalled, collection of family and other portraits by Reynolds, Hoppner, Gainsborough, and other noted painters is a remarkable feature of the internal decoration, as is also a valuable collection of furniture, the whole place displaying taste and refinement. In the study we noticed drawings and prints of pedigree horses and "setters," and in the room below a good fireplace, brought here from Woodcote Hall, which bears the arms and crest of the Cotes family in the centre panel.

By the kindness of the owner we were entertained to a most excellent tea, and Col. Cotes being away, were taken round by the housekeeper, who was able to give answer to many, if not all, our questions.

On our return to Shrewsbury, and at a convenient time after dinner, the usual social evening, with smokes, drinks, and sketch-books all circulating to the accompaniment of informal speeches and general conversation, marked the end of our excursion, as the proceedings on

Saturday, August 17,

were individual, no programme being forthcoming.

Most of us spent the morning in a glance at the various buildings of interest in the town—chief amongst these being St. Mary's Church.

St. Mary's was for centuries a collegiate church and a Royal free chapel, but, strangely, there are hardly any authentic documents relating to its history. Archdeacon Lloyd, in a paper read to the Shropshire Archaeological Society in 1891, gives reasons for believing the original foundations to have been the most ancient in Shrewsbury, dating from Early British times, and investigations have shown that a portion of the foundations of the Saxon church exist. The Commissioners appointed by Henry VIII. to report on the churches and religious foundations of the district state in their report that "the Collegiate or Parish Church of St. Mary was founded by King Edgar for the maintenance of a dean, seven prebendaries, and a parish priest." Between 959 and 975 King Edgar is reported to have made this a Royal free chapel, and it remained exempt from episcopal jurisdiction until 1846, even now being under a special class. With regard to the present church,

Cranage, in his work on the churches of Shropshire, says: "About the middle of the twelfth century, in Stephen's reign, a cruciform church with low central tower was built, one bay short of the present one. In the transepts chapels still remaining were built, with possibly other chapels in the east wall. The nave, still without aisles, was made slightly wider than the Saxon nave. Less than twenty years later another tower was built at the west end of the church." From 1190 to 1210 some important alterations were made: the chancel was vaulted and another bay added, also chapels opening into this chancel. Aisles were added to the nave and a south porch built. In 1480 the vaulting of chancel was removed, the central tower taken down and a clerestory built from east end to old western arch of tower, and a similar clerestory was added to the nave, together with the splendid panelled oak roof (see below). A spire was added to west tower and the room over south porch rebuilt and a small staircase added. In 1579 new windows were inserted in the east end, and in the south chapel after a great storm which wrecked existing ones. The church was restored by Pountney Smith in 1864-70, and a vestry was added by Paley and Austin in 1884. Repairs to the spire were in progress during the early part of 1894, when on Sunday evening, February 11, during a gale, about 50 feet of the upper part of the spire was dislodged and fell on the nave roof, which was wrecked; this was carefully restored by Mr. Lloyd Oswell, who also designed the north porch, erected as a memorial to the late Archdeacon Lloyd in 1897. In the church is a remarkable collection of stained glass from various sources, collected and inserted here by the Rev. W. G. Rowland.



The Abbey Church did not fill us with any particular enthusiasm, and the addition of the chancel cannot be said to rank with Mr. Pearson's more successful achievements.

The White Hall is, perhaps, the most interesting building now existing in Shrewsbury, from an architectural standpoint as distinct from the picturesque. This building is supposed to have been built by a lawyer, Richard Prince by name, who purchased the abbey property at the Dissolution and used stones therefrom for the construction of this house. To avoid unpleasant comment, this red sandstone was then whitewashed, and from this fact the name of White Hall was derived.

The house, completed in 1582, is preceded by a little gatehouse of two storeys, with a large central archway and three-light window in a small gable over; this little building (like the main block) is built of the red stone referred to above, which has weathered badly, so that the whitewashing process may have been dictated from other reasons than those mentioned: one small piece of wall to which a coating

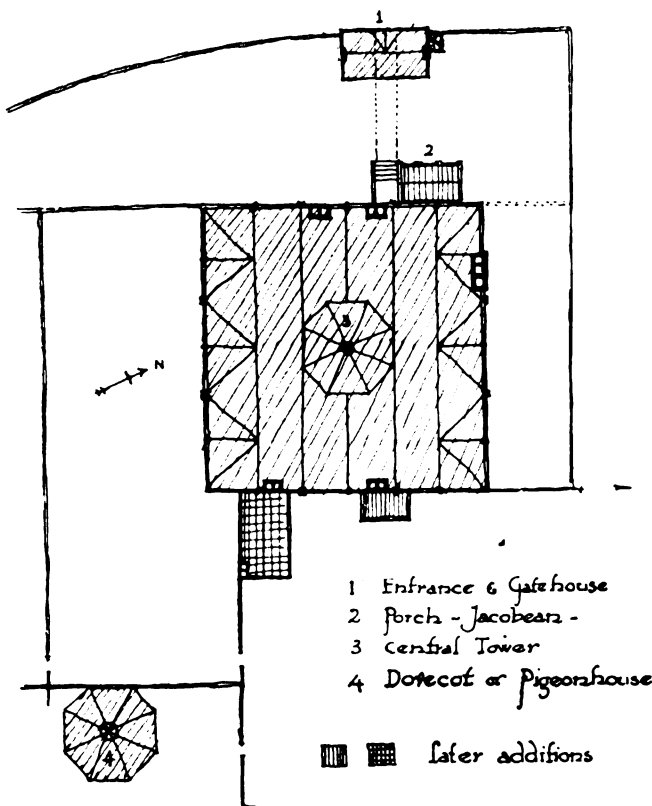
of plaster still adheres stands out in bold relief to the perished stonework around.

The red tile roof and the red brick chimney-stack and coping to the gables are surprisingly effective, and do not clash with the sandstone below.

From this little gatehouse a paved walk leads directly to the original entrance to the house, up a broad flight of stone steps and through a projecting porch in the Classic manner of slightly later date than the house.

THE WHITE HALL SHREWSBURY

Sketch plan showing Roof, & Lay out



The hall is a three-storeyed building, square in plan, and the arrangement of the roofing is ingeniously planned to show three gable ends on each front. In the centre of the building rises a high octagonal turret glazed with large windows all round and covered with a lead roof surmounted by a vane. The chimneys are particularly good examples of Tudor brickwork.

The present entrance to the building is on the east front, whilst to the south a large walled garden and lawns afford a pleasing prospect.

Here also stands a fine octagonal brick pigeon-house of the same period as the adjacent hall, the detail resembling Layer Marney, in Essex, to a curious extent.

To the south and east are fruit and other gardens, stables, &c.

Retracing our steps towards the town, we recrossed the fine old bridge known as the English bridge (1774), and so up Wyle Cop, a typical Shrewsbury Street, with several excellent timber-framed buildings on either side, in one of which the Earl of Richmond (Henry VII.) lodged on his way to Bosworth in 1485. The road at the top of this steep climb diverges; the turn to the left leads us to

THE MARKET SQUARE,

where, from the base of Clive's statue, by Marochetti, the two finest half-timbered houses of the town are best observed. That on the right of High Street, "Owen's Mansion," is dated 1592; whilst on the left stands "Ireland's Mansion," which is probably slightly earlier.

In the centre of the Square stands the old Market Hall, built in 1595, a plain stone building standing on an open arcade with windows, &c., showing good work of the period.

We now turned our steps towards the Raven, our week's headquarters, for the last time. The excursion of 1912 had joined its predecessors, and was a pleasant memory of congenial companions and interesting buildings, set in some of the most beautiful surroundings imaginable.

It is due in no small measure to the careful way in which Messrs. Brown and Hemmings framed their excellent programme that we shall not remember the discomforts occasioned by the vagaries of the weather, but only the charm of the delightful spots we visited.

In conclusion we should like to thank the Vicar of Shicnal for valuable information with regard to the history of that church and parish, and to acknowledge our indebtedness to the Revs. D. H. S. Cranage, M.A. (whose excellent work on the Churches of Shropshire we have already referred to), and H. J. Auden, M.A., F.R.Hist.Soc., author of "Shropshire" in the Little Guides series.

COMPETITION NEWS.

HUDDERSFIELD.—The Competitions Committee of the R.I.B.A. have considered the conditions of the Huddersfield Town Planning Competition, and while they cannot advise the Council to bar the competition, they consider the conditions in many respects unsatisfactory.

RANGOON, BURMA.—Messrs. Ogilvy, Gillanders & Co., of 67 Cornhill, E.C., agents for the Rangoon Municipality, write for the information of intending competitors for the new Municipal Buildings that the date in the conditions in Clause 28 has been altered from August 31 to September 28, and in Clause 14 from January 1 to February 1, 1913. The latest date for posting letters to reach Rangoon by the latter date will be by the Indian mail of January 10, 1913. The assessor appointed by the Committee is a Fellow of the Royal Institute of British Architects.

ILLUSTRATIONS.

DRAWING-ROOM DOOR FROM REDHEUGH HALL, GATESHEAD.

The drawing we reproduce was submitted by "Alpha" in the monthly competition of *The Architect Students' Sketching and Measuring Club*, and awarded a prize. A short description of the door is given on the drawing.

WALDORF HOTEL, LONDON.

This building needs no further description than is given by our illustrations.

A SCHEME has been matured for the enlargement of the Catholic Church at St. Anne's-on-Sea at a cost of £4,000.

MR. ROBERT MORHAM, aged seventy-three, of Edinburgh, architect, for thirty-five years Superintendent of Works to the Corporation of Edinburgh, has left estate valued at £10,769.

MESSRS. A. HARRISON & COX, architects, Birmingham, have prepared plans for a new church which is to be erected in instalments by the congregation of All Saints Church, King's Heath.

THE North British Academy of Arts will hold the sixth exhibition of its members' works in the Picture Galleries of the Crystal Palace, Sydenham, London, S.E. The exhibition will open on November 1 and close on December 31. Admission will be free to visitors at the Palace. The N.B.A. has already held successful exhibitions in York, Burnley, and Newcastle.

MR. J. WILSON PATERSON, H.M. Office of Works, Edinburgh, has made an inspection of the ruins of the ancient priory at Whithorn, with a view to making the vaults watertight. The priory was erected in the twelfth century by Fergus, Lord of Galloway. The Government recently acquired two cottages in the burgh as a museum for the relics, &c., in connection with the priory.

THE death took place last week, at his residence, Great Stroatley, Hazelmere, of Mr. George Tunstall Redmayne, who was a brother of the late Mr. R. R. Redmayne and Mr. J. M. Redmayne, of Newcastle. The deceased gentleman, who was about 73 years of age, served his articles as an architect with Sir Alfred Waterhouse. Mr. Redmayne married a sister of Sir Alfred Waterhouse. She died some years ago. The deceased leaves two sons.

WITH reference to the proposed competition of plans for a Town Hall at Winnipeg, H.M. Trade Commissioner for Canada reports that designs for the building in question have now been invited by the Winnipeg Board of Control from architects resident in Canada. The estimated cost of the work is put at \$3,000,000 (about £616,600). H.M. Trade Commissioner adds that although it is probable that the contract for the erection of the building will be let as a whole, there may be opportunities for British firms to supply the necessary materials and fittings.

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PHOTO BY THE TELLA CAMERA CO.

WALDORF HOTEL LONDON

Messrs. A. MARSHALL MACKENZIE & SONS, LTD.

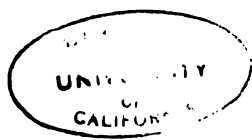
The Architect 30#1912

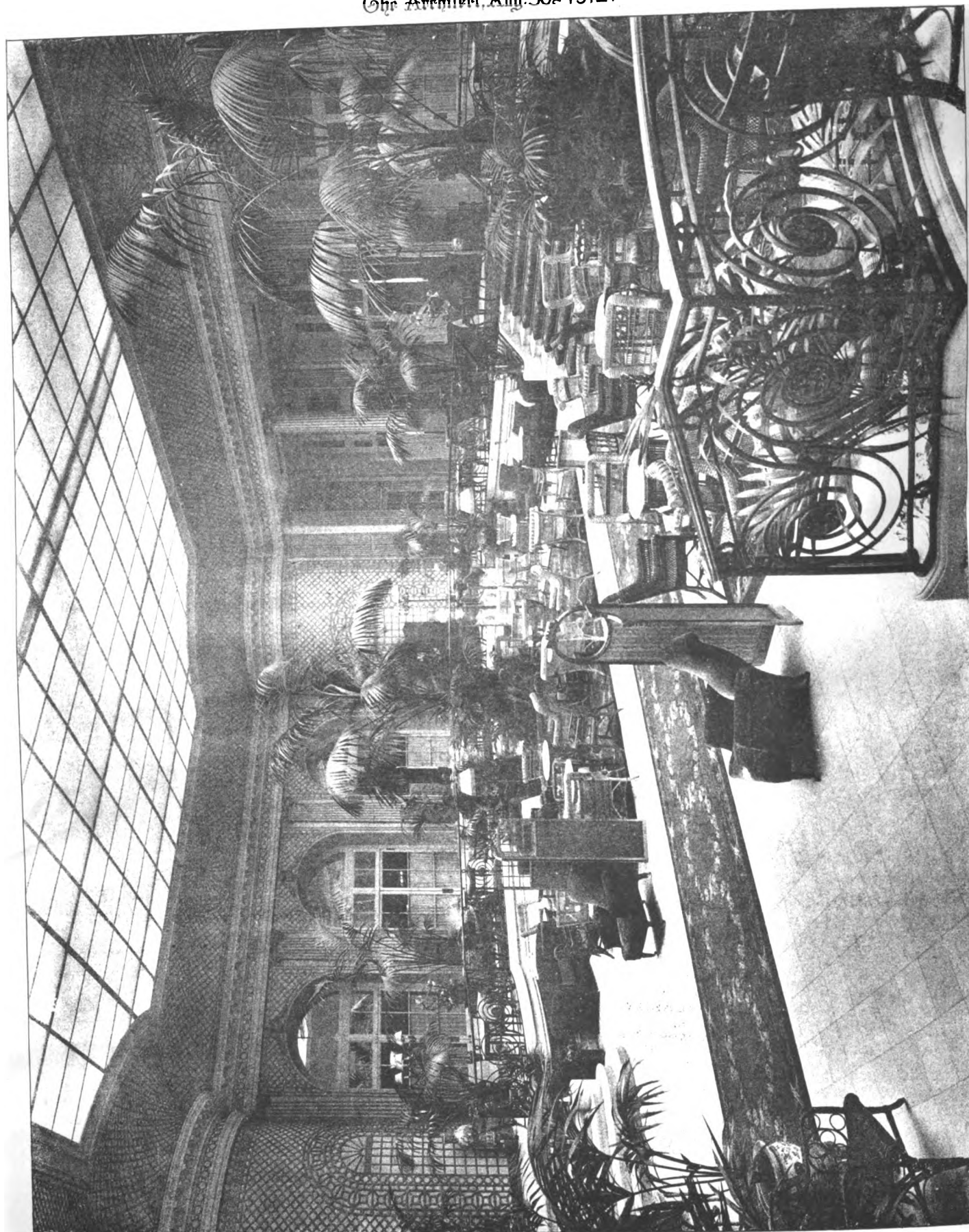


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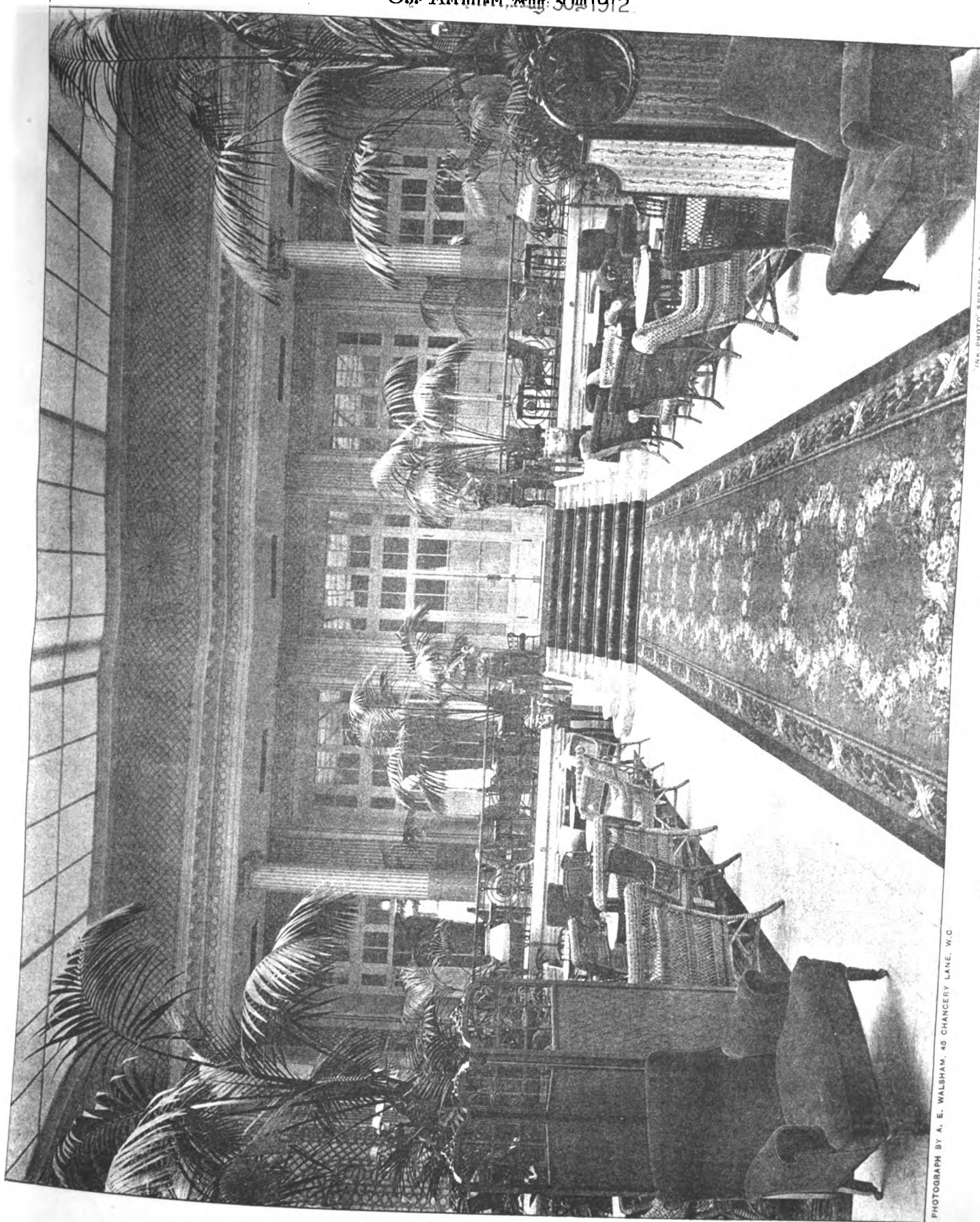




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WALDORF HOTEL, LONDON: INTERIOR OF PALM COURT.
Messrs. A. MARSHALL MACKENZIE & SON, Architects.

PHOTOGRAPH BY A. E. WALSHAM, 40 CHANCERY LANE, W.C.



WALDORF HOTEL, LONDON: INTERIOR OF PALM COURT.
Messrs. A. MARSHALL MACKENZIE & SON, Architects

PHOTOGRAPH BY A. E. WALSHAM, 45 CHANCERY LANE, W.C.

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REDHEVGH HALL GATESHEAD ON TYNE

DOOR TO DRAWING ROOM

REDHEVGH HALL IS A GORGEOUS HOUSE STANDING IN THE NORTH PARK OF THE ANGLICAN CATHEDRAL IN GATESHEAD. THE HOUSE WAS BUILT BY THE BISHOP OF DURHAM IN THE SEVENTEENTH CENTURY. THE DOORWAY SHOWS THE INFLUENCE OF THE FRENCH AND ITALIAN ARCHITECTURE OF THE SEVENTEENTH CENTURY. THE DOORWAY IS A GOOD EXAMPLE OF THE ARCHITECTURE OF THE SEVENTEENTH CENTURY. THE DOORWAY IS A GOOD EXAMPLE OF THE ARCHITECTURE OF THE SEVENTEENTH CENTURY. THE DOORWAY IS A GOOD EXAMPLE OF THE ARCHITECTURE OF THE SEVENTEENTH CENTURY. IT MAY BE OF INTEREST TO ADD THAT THIS BEAUTIFUL ROOM IS NOW USED FOR THE STORAGE OF HAY.

NOTE.
OTHER SIDE OF DOOR, IN
HALL, HAS SAME MOLDINGS
BUT WITHOUT ENRICHMENTS

WOOD PANELING
2 9/16" HIGH, ROUND
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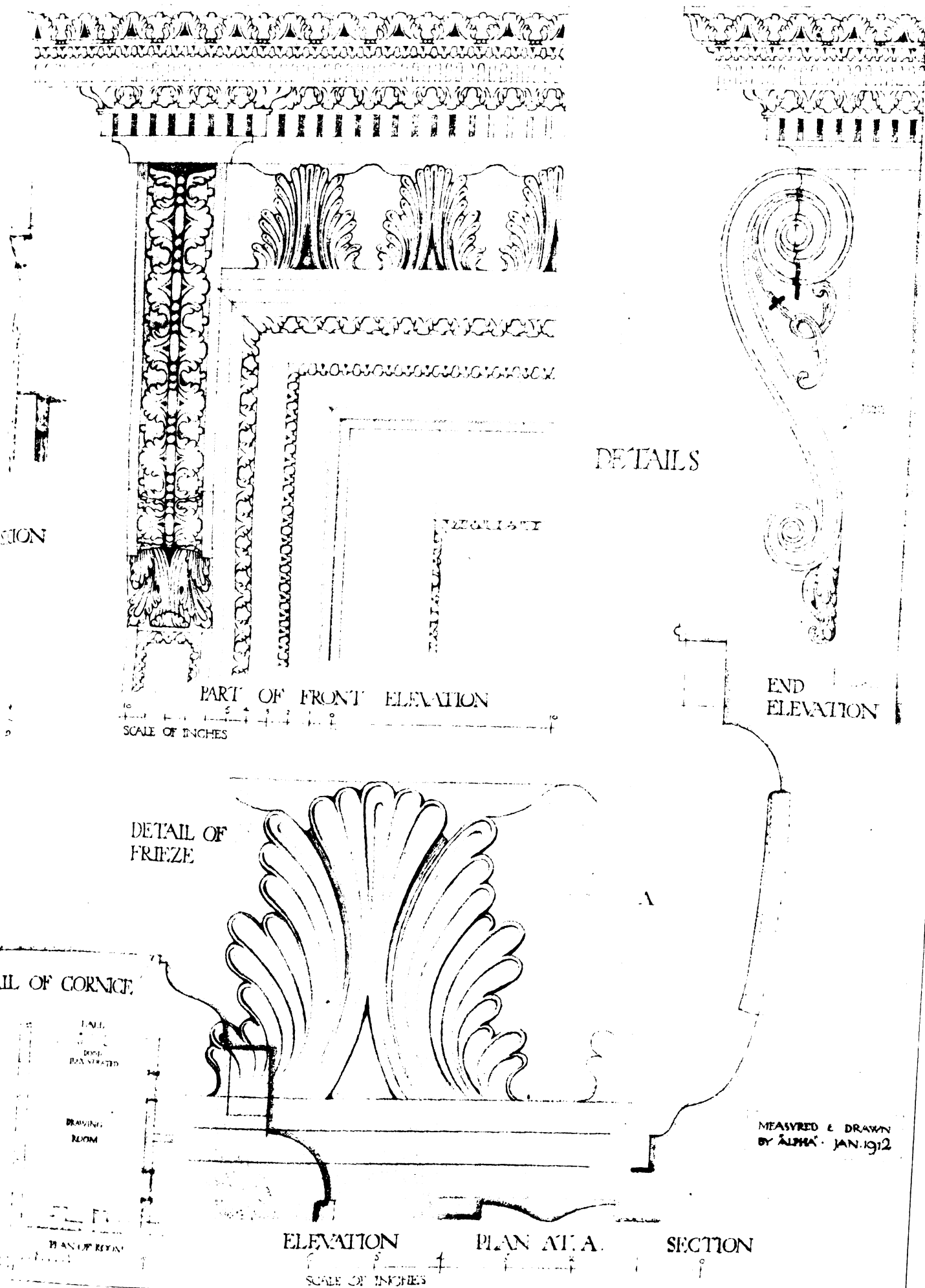
SECTION

DETAIL

PLAN ELEVATION TO DRAWING ROOM

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INTERIOR DECORATION.—III.

GREAT BRITAIN.—II.

By ALBERT E. BULLOCK, A.R.I.B.A.

(Continued from last week.)

FERGUSON, in his Introduction to the "History of Modern Architecture," endeavoured to show by means of parallels the influence of literature upon current art in different periods. It is generally recognised that literary change preceded a corresponding change in architecture, the fuller development of Renaissance work being very dependent upon the discoveries made abroad in the eighteenth and nineteenth centuries.

The sixteenth century had seen the masterpieces of Shakespeare, whose death in 1616 marks the close of a distinct style in architecture, to be immediately followed by the masques of the Court of James I. designed for the most part by Inigo Jones to the accompaniment of the satires of Ben Jonson.

The early years of the seventeenth century had not, however, thrown off all the trammels of Elizabethan influence, certain features of which prevailed well into the reign of Charles I. The decoration of Holyrood Chapel for the occasion of James's visit to Scotland in 1617 was followed in 1628 by the building of Heriot's Hospital, Edinburgh, which, although not completed until 1660, exhibits very few of the characteristics of the more advanced practice of the Southern architects.

From an extract of the Report of the Privy Council of Scotland for 1616 we find that his Majesty, having "gevin expres command and direction for repairing of his Majesties chappell within the Palice of Halirudhous with daskis, stallis, laftis, and otheris necessaris, in suche decent and comelie forme and maner as is agreable to his Majesties princelie estaite," and it having been found that "this work could not be gottin so perfyttlie and well done within this cuntrey as is requisite," therefore Sir Gedeone Murray, of Elibank, Deputy Treasurer, "with the speciall advise and consent of the Lordis of his Majesties Privie Counsall, hes conditioned and aggreit with Nicholas Stone, carvair, citienair of Lundone, for making, perfytyng, and upsetting of the saide worke within the said chappell, upoun payment to be maid by the said Deputie Thesaurair to him of the sowme of foure hundreth and fiftie pundis sterling, lauchfull money of England," &c. This was carried out in August 1616, and according to a footnote of the extracts of the reports of the following year the work was either superintended or designed by Inigo Jones.

A certain Matthew Goodrick, of London, was paid £200 for painting and gilding the work in the Holyrood Chapel decorations, which consisted of the wainscot work of Nicholas Stone ornamented with pictures of the twelve Apostles, the four Evangelists, Faith, Hope and Charity, including other religious representations, and finally a pair of organs costing £400, necessitating certain structural alterations to the fabric of the interior for their accommodation.

These things caused no small stir in Scotland, the people imagining that James was introducing Popery to the country, resulting in a petition being sent to the King to have the images removed, which was eventually granted, accompanied with "a sneer at their ignorant provincialism." There is no doubt that the high church views known to be held by the "Bishops Andrewes, Neile, Montague, and Dr. Laud," who came with the King to Scotland "to instruct them" in religious rites, frightened the simple ideas of the "Wee Frees," and the service which was held on May 17, 1617, in the English fashion, with a full choir, surplice and music, hardly coincided with their code of religion.

Inigo Jones, who was born in 1572, was the first English architect of note to travel and study in Italy. He was invited to the Court of King Christian at Copenhagen and returned with that King's sister, the wife of James I., to England, who appointed him her Architect and Inspector General of Royal Buildings. At the age of forty years he paid his second visit to Italy, and shortly after his return commenced the building of Chilham Castle, Kent, for Sir Dudley Digges, Master of the Rolls, who died in 1638. His monument in the church at Chilham is the work of Nicholas Stone. This sculptor was associated with Bernard Jansens on the tomb of Richard Sutton in the Charterhouse Chapel in 1615, and from 1619 to 1622 he carried out Inigo Jones' design for that portion of the famous Palace of Whitehall known as the Banqueting House—the scene of the execution of Charles I. The original designs for this Palace were published by Kent, and the second design made by Jones in 1639 by Campbell in "Vitruvius Britannicus."

Audley End was practically completed in 1616 by Thorpe and Jansens. The room known as the "Fish Room" (so named on account of the subjects modelled in the ceiling panels) is perhaps the last expression of this period of decoration, the doors and panelling below the frieze being later additions.

Apethorpe Hall, Northamptonshire, was in progress of erection simultaneously with the building of Houghton Hall, Bedfordshire, by Inigo Jones. The former was erected for Sir Francis Fane, Earl of Westmoreland. The original dwelling was of the reign of Henry VII., of which there are indications yet existing. Sir Walter Mildmay's chimney-piece bears the date 1562, but is obviously of later execution. Sir Francis Fane's additions were completed in 1623. The chimney-pieces in this house are of exceptionally good design, having details resembling some of the monumental productions of Nicholas Stone. The Library is later, probably of the time of the second Earl, about 1653, and exhibits the influence of the work of Inigo Jones as practised by his son-in-law, John Webb.

The Great Chamber of Gilling Castle, Yorkshire, has been previously referred to. The work here is late Jacobean, having lozenge-shaped panels, a pendant ribbed ceiling, and coloured ornamental frieze bearing numerous coats of arms in the foliage of the trees forming part of its decorative scheme, all of exceptional interest. The decorations of the other rooms are of later date, Mrs. Hunter's Boudoir being of Charles II. period with delicately modelled plaster panelled walls. The Long Gallery is after the manner adopted by Sir John Vanbrugh, and the wall decorations are a subsequent restoration by Crace in 1846. Still later additions have been made by Mr. Walter Brierley, of York.

Dorpfold Hall, Cheshire, was commenced in 1616 by Ralph Wilbraham. The house suffered from a siege during the Civil War in 1644 and was subsequently restored by Roger Wilbraham. The chimney-piece in King James' Room is dated 1621, and consists of a stone overmantel containing the coat of arms and motto "BEATI PACIFICI." The panelling is simpler than that of Gilling Castle, except in the great drawing room, where the treatment of the overdoor is a rather unusual feature.

The ceiling to this room takes a barrel formation with sharply moulded pendants and is ornamented with escutcheons, fleur-de-lis, the Scotch thistle, and other devices. The ceiling to the Library is later, probably about the time of the Adams chimney-piece in the same room. The staircase is Jacobean, having arabesque carved newels, carved balusters and string, the former being of wide spacing connected with arched fillings and key-blocks. The present owner is Mr. Henry Tollemache.

Aston Hall, Warwickshire, was erected for Sir Thomas Holt between the years 1618 and 1635. Mullioned windows are still retained. The pilasters on the panelled side are rather attenuated, the lower portion and the pedestal of each being carved in high relief apparently to obviate this defect. The panels are filled in with moulded arches and imposts. The building has been attributed to John Thorpe, but was probably completed after his decease.

Jesus College, Oxford, contains a room of late treatment with panelling of very rich design. The key-blocked ovals inserted in each panel have slight incised arabesque ornament. The panelling is divided in sections by fluted Ionic columns placed upon carved pedestals. The stonework to the window and fireplace is of Tudor pattern. The ceiling takes a more floral form than work of preceding date, and it may consequently be taken as a transitional example. The whole room is very effective, free from the conceits of the previous decade, and quite homogeneous in design.

At both Oxford and Cambridge there are numerous specimens of renaissance Art. The work of Theodore Have (or Havenius of Cleves) at Caius College, Cambridge, is noted for its originality, while Thomas Holt is cited as the architect of many colleges at Oxford. Archbishop Laud caused alterations to be made to the quadrangle and garden front of St. John's College, Oxford, about 1631 to 1635, upon which works the sculptor Hubert le Sueur is known to have been employed. There has always been some mystery as regards the identity of the architect engaged for this work, there being little foundation for the statement that Inigo Jones had any connection with it, while his co-adjutor Nicholas Stone was in continuous communication with Oxford between 1631 to 1637 during the erection of various works at Cornbury Park, near Charlbury, where he made some additions for Lord Danvers, and erected the three stone gateways now forming entrances to the Botanic Gardens (vide *The Architect*, Sep-

tember 3, 1909, p. 147, *et seq.*). The name of Timothy Strong has been preserved as the builder of the south front of Cornbury about 1630, which date coinciding with the period of Nicholas Stone's contract rather points to the possibility of Strong being engaged by Gabriel Staces for the work. Staces was Nicholas Stone's cousin and his agent at Oxford. He was associated with Hubert le Sueur upon the marble fountain at Old Somerset House in 1636. Later additions were made to Cornbury by Strong's son under Hugh May's directions, who visited the work with John Evelyn in 1664, and still more recently an extension has been made by Mr. John Belcher. Of Nicholas Stone's other work at Oxford there is little to add since it is chiefly of a monumental nature, as the delightful mural tablet erected at Merton College Chapel to Thomas Bodley in 1615, that to Hugo Barker at New College Chapel in 1632, and in 1637 the entrance porch to St. Mary's Church in the High Street. Dr. Fells, Canon of Christ Church Cathedral, Oxford, paid Staces £69 in 1632 for work there the nature of which does not transpire, the only monument traceable to the family being that erected to John Banks in 1654 by John Stone. There are other gateways and piers constructed by the elder Stone, as that for Beaufort House, Chelsea, in 1622, since removed to Lord Burlington's villa at Chiswick; the York Water Gate, near Charing Cross, in 1626, and the gate piers to Holland House, erected in 1629. He probably supplied chimney-pieces to Theobald's Palace when Inigo Jones made the alterations and additions there in 1623. He records in his diary having made a great number of chimney-pieces for important country seats. Of the six made in 1632 for Bagshot Lodge one is described as of Portland stone carved and inlaid with marble; others for Sir Robert "Spey," Sir Abraham "Dawas" of Putney, Sir John Beron of Hull, one for the King's Presence Chamber at Windsor Castle, also many other works there, and one for the Queen's Bedchamber at Old Somerset House of white marble, according to the directions of "Mr. Jones, Serveer of his Mt.'s workes." Stone sent a quantity of marble and stone for staircases, paving, &c., to various places, as the stone staircase of Hatton House for the "Rt. Hon. the Lady Elizabeth Hatton" in 1634, and a quantity of black marble work for York House, London, both places having long since disappeared. In 1636 he sent a quantity of material for paving the tennis court at Hampton Court Palace and the Queen's private chamber, and in the same year some stone to Oatlands Park, near Weybridge, where Inigo Jones was making preparations for the Queen's reception. He was engaged at Greenwich in 1637 with paving the terrace walk with Purbeck marble and the "Great Square Room" in the Queen's House there, which Inigo Jones designed.

The additions to Castle Ashby, Northamptonshire, designed by Inigo Jones, were carried out between 1627 and 1635, Stoke Bruerne Park, in the same county, being completed by Jones in 1634.

(To be continued.)

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

II.—PLANS.—VAULTING.—TRIFORIA.—CLERE-STORIES.—COLUMNS.

(Continued from last week.)

THE third example is Sta Maria sopra Minerva at Rome, the only pure Pointed church in that city, and one of the largest and finest built by the Dominicans in Italy. Here the piers show, in section, four half-shafts on a square core. The two longitudinal half-shafts sustain the pier arches, which, like those at Arezzo and Florence, are broadly Pointed, and of one plain order only. The half-shaft on the nave side of each pier is carried up, uninterrupted by the capitals of the shafts of the pier-arches, to support the transverse arches and the diagonal ribs of the domical quadripartite vaulting, which, as at Arezzo, is richly coloured.

The Gothic architect, after he had once perceived the kind of effect it was desirable to substitute for the Lombard expression (the Lombard construction having been discarded), found, almost ready-made to his hand, one of the most important means of producing it—namely, the Lombard ornamental column, with its base and capital, which in various ways expressed a total independence of constructive origin. There was, however, this difference between the Lombard shaft and the Gothic shaft—that the first was con-

structively superfluous, and expressed as much; whereas the last had really to take a primary part—to bear burdens, and yet appear to do nothing of the sort, the burden and bearing members being alike transformed into portions of the great vertical stream of piers, pointed arches, groined vaults, and vaulting shafts. As ages rolled on, the simplest way of obtaining this effect was to omit the capital altogether. It took some time, however, for architects who had always regarded a capital as the natural termination of a shaft to get rid of the tradition, and when at last they seem to have done so it was found that there were serious artistical objections to dispensing with it altogether. When capitals were totally omitted, as was often the case in Late French, Belgian, and German work, the eye became sensible of an unpleasant dubiousness as to the point from which the arch sprang, and when the moulded or many-shafted pier was the stem from which arose a system of still more divergent ribs and mouldings, the capital was needed to cover the junction of the two systems, its omission necessitating the very disagreeable alternative of the "discontinuous impost." Elaborate devices were therefore invented for denying and, as far as possible, reversing in their visual effects the nature of capitals as constructive members.

Ruskin condemned a large number of Gothic capitals as "unnecessary and ridiculous," because they have no "bearing power." Now it may be held that this expressed absence of any increase of power at the point of the capital is the only condition under which capitals could have been admitted into Gothic architecture, and that they are neither "unnecessary" nor "ridiculous," because they perform what we have seen to be the important function of marking the termination of the shaft or column and the commencement of the arch.

Another and a very good reason for the existence of capitals in Gothic architecture is one and the same with that which constitutes the merit of the horizontal channels under the Doric *ovolo*—namely, that they really add to the ascendant vigour of the members on which they occur by opposing to that vigour an obstacle to be conquered. Professor Freeman, whose remarks on some of the means of producing the effect of aspiration in Gothic architecture are particularly valuable, rightly said: "When there is no strife there is no victory; the vertical line cannot be called predominant unless the horizontal exist in a visible condition of subjection and inferiority."

Our Romanesque and First Pointed Gothic buildings were always full of shafts in doorways, windows, and clustered piers; our Second Pointed or Decorated buildings very rarely present us with distinct columns or shafts, though still giving examples of columns and shafts combined with other mouldings; while our Third Pointed or Perpendicular works, as a rule, present nothing but combinations of mouldings. The consequence was that the art of sculpture deteriorated in a parallel course. There is no place in which architectural sculpture can be more fittingly displayed than in the capital of a column. It is the most convenient, and at the same time the most conspicuous, position for it. It is, too, the most important feature in every design.

The gathering together of all the arch-mouldings into one, and concentrating their force before transmitting them to the ground, is the one point which ought to be emphasised above all others; and it is one of the strongest among the many reasons in favour of the thirteenth-century or Early Pointed style, and against the later varieties of the style, that in the one by the use of shafts with forcible and elaborately cut capitals this point was distinctly marked, while in the other by the disuse of the shaft and the constant practice of carrying the mouldings of the arch down to the ground without any interruption, it was determinedly ignored.

In this respect, therefore, above all others, Italian Gothic artists are entitled to our warmest praise. The love of variety characteristic of all good Gothic artists is conspicuous in their treatment of the column almost more than anywhere else. When they are plain cylinders, and not banded (and the band does not occur at all frequently), Italian columns, chiefly during the Romanesque period, taper slightly at both ends, as in the nave of San Sisto at Viterbo, and in many cloisters, though as to the effect of this there may be two opinions.

Of course, when the shaft is spiral, or when the occurrence of a band destroys the idea of continuity from base to capital, this is less common.

Among thirteenth-century examples of tall, plain cylindrical columns of great girth, those in the nave of Orvieto Cathedral are the most finely proportioned. They are tall,

built up of dark and light stone in alternately regular courses, and their capitals exhibit a variety of foliated ornament, combining boldness, grace, and vigour of execution. Some of the capitals have octagonal abaci, some square, others circular; but no regular order is observable. The bases are low, round in some cases, octagonal in others, and some are enriched at the angles with tongues of leafage. The respond, or half-pier, at the east end of the arcade on either side is especially beautiful, its corners being enriched from top to bottom with a continuous row of leaf-shaped ornaments, carved in light or dark stone, according to the colour of the layer on which each piece is imposed, the light being admirably contrasted with the dark.

Small circular shafts in round arched and Pointed Italian work are frequently inlaid. The tiers of arcades on the west front of Lucca Cathedral may be cited as the most charming examples of this mode of decoration. The shafts are white, inlaid with dark green marble; some are enriched with diaper-work, others are girt with a succession of simple chevrons, others with spiral lines, crosses, flowers, fleur-de-lis, foliated circles, and one at least with a succession of imitations of arcades, one over the other. In the building these shafts are frequently alternated with sculptured shafts, deeply cut with spiral lines of mouldings, occasionally adorned with sculpture of flowers, as in Giotto's campanile at Florence.

Octagonal shafts are of occasional occurrence, and a good example is seen in the shafts forming, with rich iron work between them, the screen round the high altar, at the junction of the nave, choir, and transepts of Sta Chiara at Assisi.

Spiral shafts are often richly inlaid with mosaic. One of the most beautiful of the many examples of this treatment is the monument of Pope Benedict XI. in St. Dominic at Perugia. Here the pillarets supporting the canopy of the tomb are of white marble, the spiral lines formed with a band and fillets, and at the base and neck of the shaft the heads are all connected together with vine-leaves carved in the spandrels between the little connecting arches. Small figures carved in the mouldings are filled in with glass-mosaic patterns in red, green, and blue on a gold ground.

The shafts in the tomb of Pope Adrian V. in San Francesco, Viterbo, and in Orcagna's shrine in Or San Michele, Florence, are of the same character, and they are of frequent occurrence in the best and richest internal work.

(To be continued.)

THE PHYSICS OF AIR IN RELATION TO VENTILATION.*

THE movement of air is affected by so many conditions and circumstances that it is, perhaps, impossible to design a system of ventilation which will automatically adjust itself at all times and under all circumstances. The most we can do is to provide the means (and they should be as simple as possible) for adjustment to meet all conditions, and to leave those occupying the building to make reasonable use of these means.

The object of this short paper is to draw attention to certain simple laws which govern the movement of the air, and to suggest that the best ventilation is secured by making the fullest use of them.

Dr. Shaw defines ventilation as consisting "in the passage of air into the space to be ventilated and out of it again, and the distribution of air during its passage through the . . . ventilated spaces," and we may add that in ventilation we seek to approximate the purity and constitution of air within a room to that which is supplied in such abundance outside. The problem is to do this without what is called draught, and a draught may be defined as a perceptible movement of air around the body. It becomes inconvenient and even dangerous when the temperature of the air is much below that of the body.

Now firstly as to the composition of air. We know that it is mainly formed of two elements, nitrogen and oxygen, uncombined, in the approximate proportion of 79 and 21; and that the latter is the active principle. Indeed, we may regard nitrogen as little more than a diluent, for pure oxygen would be too strong in its action. Its normal proportion in the air may be taken as the best adapted for the healthy action of the lungs, and any excess or decrease has an immediate effect upon that action. CO₂ is also present in the very small proportion of .04 per cent.

* Abstract of Paper read before the York Congress of the Royal Sanitary Institute by A. Saxon Snell, F.R.I.B.A. (Fellow).

It may be assumed that pure air has no constituents which will spontaneously change its essential character, or render it poisonous to us. It may, however, be polluted by external agents, and it is the vehicle of these agents. Even the .04 per cent. of carbonic acid, which is present in fresh air, is not in itself poisonous. Its action is merely negative. If the proportion is increased by the combination of carbonic with free oxygen, it leaves the air proportionately the poorer of so much oxygen. Its main importance is due to the fact that it is also an index of really deleterious matter in air.

By ventilation, therefore, we seek first to remove the surplusage of CO₂ and replace it with oxygen. Practically we do this by constant dilution with fresh air, and for efficiency this dilution should keep down the proportion of CO₂ to .06 per cent. It is generally accepted that for this purpose it is necessary to introduce 3,000 cubic feet of fresh air per hour for each person in the room. We have also to remove the excess of moisture with which every expired breath is charged.

I do not propose to discuss the question of moisture in air, important as it is, and I will only note that generally speaking it is essential for comfort, and that the amount necessary has been fixed at 70 per cent. of the total amount which can be held in suspension at any particular temperature. As to whether moisture is necessary for health is another matter. It is too complicated a question to consider now.

In the second place I would refer to the question of temperature.

We cannot treat ventilation and heating apart: they must always be considered as two parts of one subject, but we must beware lest acceptance of the proposition without qualification leads, through misconception, to error.

Heating should be used first and foremost as a corrective to the effects of ventilation on temperature, and on occasion as an aid or stimulant to movement of air.

In the next place we come to the movement of air, and it has by far the most important bearing upon ventilation. In a general way we can safely say that air is always in movement. The difference between apparent stagnation and a wind current is one of degree only.

The causes of movement are ascribed to the two forces of diffusion and convection, and of the two the latter is by far the more powerful. In all schemes of natural ventilation it is mainly relied upon. Diffusion is slower and more feeble in its action, and, as a consequence, I think it is too often neglected as a factor in ventilation; but it goes on, nevertheless, and can be made use of with good effect.

Given any volume of air, a change in temperature in one part immediately produces movement. The colder part being the denser at once descends by the force of gravity, and in doing so pushes up the warmer and lighter air. This is called the "law of convection," and, Dr. Shaw points out, it is the dominant physical law of ventilation. He emphasises it by several illustrations, showing how much more powerful it is than any movement induced by mechanical means. Realisation of this law is absolutely essential for any proper understanding of the process of natural ventilation.

Changes in temperature may be produced in a room by many causes. When the air is heated it expands though not to any great extent; and in so doing in a closed space causes a state of "plenum." With an outlet available, the extra volume is released and equilibrium restored. The air left behind is still lighter than the outer air, and if an opening is made in the wall between them, the latter will by force of gravity enter and displace the former. Thus, we have two natural forces to assist us in the removal of heated air. I take no account of a third, the action of the wind; because the problem of ventilation should not depend upon so variable a force. Necessarily, with one opening only, both incoming and outgoing air will be considerably throttled, and the interchange slow.

With two openings, one at top and one at the bottom, the lower one would act as an inlet, and the upper mainly as an outlet. There would then be comparatively little throttling, and we should obtain something approaching continuous movement of air in the room. But cold air at the floor level and warm air above would mean for the occupants of a room cold feet and hot heads. The reverse is to be preferred, but the law of convection forbids. We can, however, effect a fairly successful compromise by placing inlets between the top and the bottom of the room (in practice about seven to eight feet above the floor line), sheltered with hoppers to give an initial upward current to the air. The momentum of the incoming air is sufficient to direct the

stream towards the ceiling, until it is overcome by the force of gravity, when it falls gently through the warmer air. In its fall, it is met by the rising warm air, through which it filters downward, absorbing in its passage a little of the heat of the rising current. It will gather more heat from the bodies of the occupants. Every such accession of heat of course retards the tendency to fall, and in time reverses the current. Indeed, as Dr. Shaw found by interesting experiments, the current is almost immediately reversed upon coming in contact with warm bodies. Nevertheless, the bulk of the air will in the absence of heat, at or about the floor line, continue to fall. Arrived at the floor line it will spread laterally. Theoretically, there it should remain in the absence of any access of temperature sufficient to cause it to rise again. That is not desirable, but, on the other hand, it should not be allowed (or at any rate be forced) to ascend again, because in doing so it would have a tendency to carry with it fine particles of dust gathered at the floor level. Therein lies one of the virtues of the ordinary open fire, which induces a strong current of air at or about the floor level.

We all know and have suffered from that strong drag of air along the floor, so powerful is the action of an open fire, and to counteract this a separate supply of air is often brought in at the fireplace to feed the fire, a practice which appears to me to be of doubtful value. It must be remembered that these distressing floor draughts are not caused by the air which is drawn down from the ventilators, but comes direct from the outside of the room under doors and at window openings. The remedy is to close up these direct inlets at the floor level and to open the ventilators or windows wider.

Notwithstanding the powerful drag of an open fire, a certain part of the air will rise when its temperature is raised by contact with warm objects in the room. In larger rooms, too, it is necessary to supplement an open fire with radiators round the walls, and these also warm the air and thus lift it from the floor level; but I doubt the advantage of placing ventilating openings behind them.

Now let us follow up that part of the air which is expelled from the lungs and given off from the bodies of the occupants heated and contaminated. The law of convection causes it to rise towards the ceiling. As we have seen, the incoming fresh air in its descent absorbs from it some part of its heat, but in general not a sufficient amount to materially retard its ascent. Arrived at the ceiling, it will spread laterally, and there it would remain until sufficiently cooled by the incoming fresh air or other causes, to be carried down again towards the floor.

Now obviously it is undesirable to allow this contaminated air to fall again, and we should have an outlet or flue at or above the ceiling level to help it to escape into the outer air.

If it is not drawn off at a sufficient rate, part of it comes in contact with the comparatively cool surface of the outer walls or windows, and as a consequence loses so much heat that the current is reversed downwards and close to the walls. Dr. Shaw suggests that under these circumstances air outlets should be provided at the level of the window-sills. With all respect to so undoubted an authority, I cannot help thinking that in practice the system would not work. Under conditions which obtain more often than not in this country, these outlets would become inlets.

Perhaps the best method of counteracting this tendency is to have an arched ceiling with the highest part at or along the centre, with an aspirating flue or flues at the highest part. I have adopted this system with the best results in hospital sick wards, more or less upon the lines first suggested, I think, by the French architect, M. Tenon. Even a considerable coving will help in this direction.

I have a great reliance upon an effective extraction shaft, and by effective I mean one which can be relied upon to act as such at all times. A most satisfactory extraction shaft can be obtained in connection with a good and continuously used smoke flue. At Charing Cross Hospital I constructed one over 100 feet in height along the boiler shaft, and separated from it by a thin partition, and it helped me to ventilate the basement and sub-basement storeys in an effectual manner. You will no doubt remember that a heated shaft of great height plays an important part in the famous system of ventilation for the Houses of Parliament.

Another method is to have cross-ventilation by openings or windows in opposite walls. With these we obtain perfilation, or a current of air travelling right across the room at a height which will not inconvenience the occupants, and which is generally powerful enough to sweep away the rising contaminated air in its course. Such currents of air are not entirely dependent on wind (indeed, air should not be driven

across the room from one side to the other by the force of wind). They are due, I think, rather to the fact that there is always a difference in temperature (greater or less according to circumstances and aspect) between one side of a building and the opposite. It may be that the sun has warmed the walls one side more than the other at a given time, or that there is, for local reasons, a quicker movement of the air on one side or the other. Or again, that a strong current, blowing towards the building, may cause a slight vacuum on the opposite side. But, whatever the cause, the perfilation thus secured is a valuable ally in ventilation.

The adoption of this principle in schoolrooms is, at the present time, a matter of controversy; and it is perhaps well to add that it may be easily discredited if it is not used with discretion. It would be absurd, for instance, to have windows open on both sides in a gale of wind. In such a case the lee-side should be open to a much greater extent than the windward side. On the lee-side there would be a slight vacuum, which would assist perfilation.

I have referred to the law of diffusion; what part, or to what extent it plays a part in ventilation has not, I think, been fully investigated. Dr. Shaw dismisses it as "a modest assistant of the more powerful convection." The late Mr. W. T. Sugg gave me, many years ago, some interesting particulars of the manner in which he made use of this law for ventilating large rooms. I suppose it is familiar to all of us, but I may describe its action briefly.

If a closed space is filled with two gases of different specific gravities, the denser will naturally sink to the bottom, in accordance with the law of gravity; but in a short time they will mutually diffuse, the heavier gas passing upwards and the lower downwards, until the two are mixed both above and below the gauze. If a piece of gauze or other porous substance be inserted between the two, this diffusion will take place rapidly. Following this law, and assuming that the air inside a room is at 70° and that outside at 40°, if an opening is made in the wall and fitted in with gauze or any fine mesh screen, the cold air will pass into, and the hot out of, the room, and rapidly enough to give good ventilation. The fineness of the holes through which the air passes breaks up a solid stream of air outside into an infinite number of small streams inside, and so obviates draughts. Mr. Sugg told me that he had used this method with considerable success in billiard rooms and public halls. Obviously there are possibilities in the law of diffusion.

Perhaps inevitably I have been led to discuss methods of ventilation instead of confining myself to the physical laws which govern them; but these methods, regarded as illustrations of the effect of laws, help to explain them.

In the discussion on Mr. Saxon Snell's paper Dr. Evans (Swansea) said the paper dealt with causes and not with results. It was air starvation that the people were suffering from. In the Private Bill which the Swansea Corporation brought before Parliament this year they had a clause requiring that every building used for public purposes should be properly ventilated. He got little help from the committee, however, because the Local Government Board advised that the clause should be cut out, and as a matter of fact he was not allowed to give evidence.

Mr. S. H. Davies (York) said he approached the question from the point of view of the chemist, and in York he had had the opportunity of making a large number of air tests in connection with schools and factories, and he did ask that architects should be generous with regard to their testing of air. Architects had to design rooms not simply from the point of view of ventilation, but there were other considerations which governed them, and he would like to ask Mr. Saxon Snell what he would do with deep rooms which could not be dealt with by window ventilation. If they trusted entirely to window ventilation in a big room, especially in a factory, they were bound to have a very extensive heating area. They knew that many schools had been designed which were ventilated by windows only. In the Staffordshire type, for instance, they got cross ventilation, but there were many schools built in which they could not get that cross ventilation. One means adopted for securing ventilation was the heated airshaft. He thought architects ought to come and see these things afterwards, and find out how they worked, and very often they would find the air flowing in the opposite direction. In the case of a York school he had suggested putting a powerful fan at the base of the chimney, thereby absolutely promoting a forced draught. There was also the Plenum system, and he had found in rooms he had tested that from the CO₂ point of view they did get an advantage from the mechanical system. But in the Plenum ventilated school, if the teacher opened a window in a class-room there was a direct loss of air in every other room; but by having

flaps over the inlets and outlets in the room in which the window was opened they could get over that difficulty. He thought that architects should co-operate with chemists in this matter.

Mr. Saxon Snell, in reply, said he cordially agreed that the architect and doctor and chemist should co-operate in such a matter. The great trouble where there were so many complaints about defective ventilation was that only one had been consulted. The architect who thought he knew all about such things put them in without understanding the seriousness of the matter. He was afraid that in many cases the doctor with little knowledge of construction but with many fine ideas about ventilation would make equal failures. His advice to younger members of his profession had always been that the person who was going to live in a house was the person who knew what he wanted, and in the same way if he was designing a school or a public building he would go to the people who had to administer it. The great thing was to understand what the actual requirements were. In all those technical questions of ventilation and light they wanted the co-operation of men who had studied them, and certainly with regard to ventilation the chemist's knowledge was very desirable. He was asked what he would do in the case of a factory building, and he had already said that abnormal buildings required abnormal treatment. He would include a badly designed building as abnormal. He was not saying that mechanical ventilation was not good; but his view was that they should not design buildings which required mechanical ventilation. In the Staffordshire schools the point was dealt with. In the old central hall type of schools they could not ventilate properly, and the Plenum system was tried with a good deal of success. But do what they would with mechanical ventilation, it could not be so good or so economical as natural ventilation.

CHURCH ARCHITECTURE IN NORTHAMPTONSHIRE.*

(Concluded from last week.)

In certain churches during the first half of the thirteenth century there was developed, as in the fenland district, a love of rich detail and in particular of elaborate and deeply-undercut foliage. Warmington and Polebrook are some of the most beautiful and attractive examples of the richer side of that stage in development which our forefathers called the Early English style.

But even at Warmington and Polebrook the general character of the design is simple, and decoration is lavished only on certain parts of the building where it is thought to be appropriate. The thirteenth-century arches of the south arcade at Polebrook, following the semicircular outline which was slow to disappear in this shire and the neighbouring county of Rutland, are merely chamfered; and it is impossible to point to a Northamptonshire church of this century which is treated with the attention to moulded arches, foliated capitals, and flower and leaf sculpture in the hollow moulding of window arches and jambs which is distinctive, for instance, of the church of West Walton in the Norfolk marshland. The wall arcade in the north transept at Polebrook is a beautiful piece of work, and fellows to its slender shafts may be found in the external arcades of the towers of Higham Ferrers or Raunds; but its deeply-undercut mouldings and its sculptured hood-mould stops are hardly typical of local thirteenth-century work. It may be seen, both in this arcade and in the moulded doorway of the same church, how the stone of which they are composed has a tendency, if too deeply undercut, to split or break at the edges. And it was largely this fissile character of the ordinary local building-stone which determined the course which Northamptonshire church architecture took during the thirteenth and fourteenth centuries. If undercutting was attempted on a large scale there was danger of spoiling a good deal of stone before the desired result could be achieved. Thus after 1250, when the general epoch of enlargement and rebuilding set in, the characteristic notes of Northamptonshire mason-work are dignity of design and economy of decoration. It would be hard to imagine, for its date, a more pleasant interior of a church than that of Sudborough, in the valley between Brigstock and Lowick. It is entirely of the half-century between 1250 and 1300.

Although the details of such churches are plain, the stone

is of the best quality: the builders have spared nothing which serves to emphasise the various divisions of their plan and endow them with an architectural as distinct from a merely decorative character. The properties, then, of the local building stone are responsible for a type of mason-work which aims at a general effect of architectural dignity by means of bold and simple lines and curves, and subordinates, though it does not wholly dispense with ornament. There is, I need hardly say, much elegant and imaginative detail to be found in these churches in minor features, such as the corbels which do duty as responds at Aldwinkle All Saints and Wadenhoe, in small hood-mould stops and similar architectural adjuncts all over the county; but this detail, if it has variety, is generally composed of very simple elements. The nature of his material caused the Northamptonshire mason to throw all his strength into the structural element in his building, and the result is a singular purity and precision of design.

Nowhere is this more conspicuous than in the towers and spires which from the thirteenth to the fifteenth century are the glory of the county. I believe that in Northamptonshire the western tower began gradually to supersede the central tower about the beginning of the thirteenth century. At Raunds we find a feature derived in the first instance from Rothwell and Higham—the thickening of the western wall of the tower and the consequent introduction of a shallow porch on the ground floor in front of the west door. This design continued to be in favour in this neighbourhood for many years, and appears in the much later western towers of Oundle, Rushden, Keystone in Huntingdonshire, and one or two other churches. Raunds also displays to perfection a feature which, again, is one result of the peculiar qualities of the local stone. The stone which lends itself badly to the sculptor's chisel is easily split up into thin slabs for roofing purposes, and thus the spire, as in South Lincolnshire, and again in Leicestershire, is developed to an unusual degree. At Raunds and Stanwick—the latter, with its octagonal tower, perhaps more curious than beautiful—we have spires which are doubtless an integral part of the original design, although at Raunds there was probably some delay before the spire was added. In some churches, as at Woodford, the spire is a fourteenth-century rebuilding; in other cases the tower had to wait until the fourteenth century for its spire. The octagonal spire, with broaches at the angles of the tower and without a parapet, remained the favourite form of tower-roof in Northamptonshire until the beginning of the fifteenth century.

Another and more thick-set type of broach spire with heavy pinnacles on the broaches, which recalls a well-known Oxfordshire type—namely, at Bampton-in-the-Bush and Shipton-under-Wychwood—found its way to Wellingborough about 1250. There are other spires of the same character. It seems likely that it is an importation into Northamptonshire. The general design of the spires at Woodford and Denford in the Nene valley appears to be controlled by the same influence.

In the fifteenth century the ordinary parapeted spire occurs in many instances of great beauty. Rushden and Kettering are surpassing examples of this type—Rushden in refinement, Kettering in boldness of design. A handsome type of tower with long belfry windows in pairs on each face came into fashion in the fifteenth century in the high-lying country south of the Welland, between Lutterworth and Northampton. Less ambitious in design is the modest type of fourteenth-century tower at Holdenby. The lofty and plain fifteenth-century tower at Towcester and the splendid tower of Titchmarsh near Thrapston are without local relations; the isolated character of the Titchmarsh tower may remind us of the tower at Great Ponton, near Grantham, and equally alone in its district. Disproportionately tall angle pinnacles, without octagonal lanterns, occur at Easton-on-the-Hill and Collyweston, near Stamford. At Nassington and Wilby the spire rises from an octagon imposed upon a square tower—a design of which there is an earlier example at Exton, in Rutland. I cannot help thinking that this tower and spire at Exton—one of the most beautiful things of its kind in England—may have created a strong impression on Northamptonshire builders; for another of its peculiarities, its octagonal angle-turrets, is reproduced at Oundle and Kettering.

At Geddington is a tower whose angles are clasped by square buttresses of small projection, with very slight diminution by means of offsets. Such buttressing is common in the Kettering district. Of towers and spires in the south and south-west of the county there is not much to be said. A plain and lofty type of fifteenth-century tower, as at Cogenhoe, Castle Ashby, and Stoke Bruerne, was common

* An abstract of a Paper with lantern illustrations read on July 24 by Mr. A. Hamilton Thompson, M.A., F.S.A., at the Summer Meeting of the Royal Archaeological Institute at Northampton.

south and south-east of Northampton in the old deanery of Preston, while south-west of Northampton are a few saddle-back towers.

A lavish use was made in the Nene valley churches of the local ironstone in alternation with the light-coloured oolite of the neighbourhood. Much of the ironstone has perished, and in modern restorations walls and arches have often been repaired in light-coloured stone of one kind; but in the interior of Irthlingborough, in the north aisle wall at Earl's Barton, and, above all, in the tower of Rushden, we are able to appreciate the effect of colour introduced by the means of ironstone, and to see how the contrast supplies much of that light and shade which in other districts is produced by the elaborate contrast of round mouldings with recesses of deep shadow. The re-use of old material often presents some perplexing problems. This careful economy in preserving and disposing of old material is much against any theory of wanton destruction of twelfth-century work by thirteenth and fourteenth century builders. At Towcester, indeed, where the present very lofty nave arcades appear to have been heightened twice, the late twelfth-century capitals of the early arcades have been raised with the columns. Where the arcades were adequate, as at Warmington, later builders left them as they were; at Towcester and at Rothwell, where they were too low, they were altered, but as much of the old work was kept as was possible.

The general characteristics of fourteenth-century work in the county are in the natural course of development from the characteristics to which I already have called attention. The mouldings of this period, in which convex forms are freely grouped together without intermediate undercutting, had been anticipated by the local methods of moulding in the thirteenth century; and the Northamptonshire masons of the first half of the fourteenth century gave excellent proof of their inherited skill. The handsome church of Finedon, with its large transepts, its chancel planned for vaulting, and the wide arches of its nave carved with plain sunken chamfers, is an example of a style in which the traditions of Raunds and Irthlingborough are worthily carried on; while in the parallel chancels at Higham Ferrers, built between 1320 and 1330, the harmony between the later and the earlier work in the body of the church, the natural derivation of the one from the other, is readily appreciated. In one point, however, there is a slight decline. In the second half of the thirteenth century, doubtless in order to minimise the risk of spoiling too much stone by unsuccessful carving, the stone for the window tracery was cut, as a rule, in very small blocks, and thus a beautiful type of miniature geometrical tracery, with small openings and figures of delicate outline, was produced. It may be said to have reached its height about 1280-90. On the other hand, it is by no means general. At Raunds, again, the east window is of a normal geometrical pattern. The fine tracery of Thorpe Malsor illustrates that escape of geometrical figures from the restraining bond of the circle which led in course of time to the free curvilinear treatment of tracery. The transition from geometrical and conventional to curvilinear and naturalistic forms appears in the east window of Wellingborough Church, and fully developed curvilinear work appears in the west window of the north aisle at Castle Ashby and in the west window of the nave at Irthlingborough—one of the most perfectly satisfactory windows of its date which I can remember. But, as a rule, the favourite tracery of the fourteenth-century masons in these parts was of the form usually called reticulated. In Northamptonshire there are many examples, of about 1270, of windows in which the mullions are simply curved to meet the enclosing arches, so that the tracery is formed by their intersections. This is common in all parts of England, and in Leicestershire, Nottinghamshire and Derbyshire it is even more common than in Northamptonshire.

The great period of church architecture in the county was the second half of the thirteenth century, and no group of fourteenth-century churches in Northamptonshire can compare with the great Lincolnshire group east and south of Sleaford—Swineshead, Heckington, Ewerby, Helpringham, Swaton and Billingborough. Nor is there much in Northamptonshire that can match the fourteenth-century work which, west of Sleaford, appears in the beautiful chancels of west Lincolnshire, Nottinghamshire, and Derbyshire—work which has close analogies in the East Riding and in a somewhat remote part of the North Riding of Yorkshire, and had its origin, as I believe, at York itself. One member, however, of this group of chancels appears in the Nene valley at Cotterstock. The Daventry and Towcester districts have not much fourteenth-century work that calls for comment. When we come, however, within the sphere of Oxfordshire influence, at Byfield and Middleton Cheney especially, we are

in a district the excellence of which in design of this period is not easily surpassed.

At Fotheringhay is the most splendid example of fifteenth-century design which, the "new building" at Peterborough apart, the county has to show. To enter at all fully into the history of the art of the latest Gothic period in Northamptonshire would be to repeat much that applies equally to other English counties.

Mural paintings, stained glass, screen-work have all some claim upon the visitor to Northamptonshire, and of wood-work of various periods the church of Ashby St. Ledgers furnishes a rich supply. But, in conclusion, I would dwell not on these adjuncts to architecture, but on a point to which fuller reference is necessary. The chancel at Harleston was built at the expense of the rector, and the materials for the new nave were found by such inhabitants as could afford them. Each, that is, took his legal part in the work of repair. We find again and again in guide books and in attractive books for tourists allusions made to the monks who built the parish churches, or to the generous emulation of abbots which owned advowsons or appropriated rectories in the work of erecting churches in which they were thus interested. As a fact, monks did not obtain license to convert the great tithes of parishes to their own use in order that they might spend the proceeds in building churches. Where they were lords of the manor, as the abbot and convent of Peterborough were at Polebrook, they took their part in providing the nave, and may have built it at their own expense. Where, as at Castor, they were both lords of the manor and rectors, their responsibility to the fabric was larger. Where, as at Geddington, they were merely rectors, they were bound to the upkeep of the chancel, but generally arranged the vicar's stipend so that he came in for his substantial fraction of the expense. Their attitude to their responsibilities in this respect was—and no practical archaeologist who knows the value of money will blame them—as cold and critical as that of their legal successor, the average lay rector of to-day. The abbot and convent of Croyland were forced in 1383 to repair the decayed chancel of Wellingborough: the chancel of the fine church of Harringworth bears evidence, in the hasty and inferior masonry of its upper walls, of the desire of the abbess and convent of Elstow to save as much as they could of the money which they were obliged to spend on a church which none of them had probably seen. The visitations of religious houses by Bishop Alnwick, as reported by his secretary Colstone, contain many references to the decay of the chancels of appropriated churches. And these facts, although they are familiar to many, are in danger of being forgotten. Of the churches of the Nene valley, the majority at the time when most of the present fabrics were built were served by rectors, while the manors were largely held by laymen. The splendour of most of these fabrics must be put down to the munificence of rectors such as Richard de Het and lay-folk such as Henry de Bray; to the combined action, as at Lowick, of John de Heton, the rector, and Ralph Greene, the squire; to the wealth of such merchants as John Pyel, the founder of the college of Irthlingborough. And I think that, in remembering the ready action of the laymen of the day in this matter, we are also justified in assuming that, while the greater churches, especially when monasticism was at its zenith in England, exercised a powerful influence over the development of architecture, yet at the time of which I have been speaking the work of building our parish churches was entrusted to skilled local masons, familiar with the general architectural tendencies of their day, but guided in their individual work by the local material to which their hands had been trained.



Traders' Needs.

SIR,—I find, as an old trade journalist, that commercial men are determined that Parliament shall next year, by way of a change, seriously consider what burdens on trade can be lessened or removed, and how trade can be fostered instead of repressed. To aid this cause I am editing a threepenny book which will detail not only the laws which injure trade, but also the full needs of all classes of trader. And in order to make the book complete I solicit suggestions from your readers, provided that these be non-partisan, commerce, and not party, being my sole concern.—Yours faithfully,
27 Chancery Lane, W.C.: S. J. SEWELL.

The Architect.

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FORTHCOMING EVENTS.

<i>Saturday, September 7.</i>
Architectural Association Camera, Sketch, and Debate Club : Walking Expedition, start at Dorking.
The Institute of Sanitary Engineers : Visit to Central London Railway Power Station, Shepherd's Bush.
<i>Saturday, September 14.</i>
Northern Architectural Association : Visit to Sunderland.
<i>Wednesday, September 18.</i>
Sanitary Association of Scotland : Annual Meeting at Montrose (four days).
<i>Saturday, September 21.</i>
Architectural Association Camera Sketch and Debate Club : Week-end at Malden, Essex.

RURAL BY-LAWS.

WE are glad to learn that the persistent and well-founded criticisms and objections against the present by-laws affecting building in rural areas have resulted in the issue of a circular by the Local Government Board, which gives the opportunity to District Councils to modify their building regulations to a form more consistent with common sense, and tending to render possible the provision of cottages in rural districts at a price which will enable land owners to supply the needs of villagers at a rent that wages in the country will permit, without inflicting serious loss on those who build.

The circular of the Local Government Board says that it has been alleged that, particularly in some rural districts, the requirements of the by-laws exercise an unduly restrictive effect upon the erection of small dwelling houses. There can be no doubt amongst architects and others who have experience of building in the country that the allegation is well founded.

The circular further goes on to lay down the principle that by-laws are intended to operate in the interests of the inhabitants, and that it is obviously undesirable that the by-laws in any area should offer any ground for the suggestion that they are unnecessarily restrictive and obsolete in character. There cannot be a shadow of doubt that the existing by-laws in many localities are both unnecessarily restrictive and obsolete.

The subject-matter of the by-laws with which the circular first deals is that of construction, and it is pointed out that new methods of construction and design will almost inevitably demand periodical revision of by-laws. The earlier by-laws were framed with particular reference to brick construction, and imposed restrictive conditions as to the thickness and the use of materials; therefore, they are inappropriate to types of construction now in use such as building with hollow blocks or slabs of terracotta, concrete, reinforced brickwork, or reinforced concrete. The older by-laws in many cases do not provide for hollow and half-timbered walls and steel-framed walls, walling with tiles, slates, &c., filled in where necessary with incombustible materials.

Thus the Local Government Board directs the attention of District Councils to the many new methods of construction, which have for their object the lessening of the cost of building. Granted that they may not be of so permanent a type as brick-built walls of regulation thickness, but cottages are not necessarily intended to stand for a couple of hundred years, and sufficient permanency may be obtained without detriment to health or danger of fire; indeed, it is possible that improved methods may give us even more permanent and more healthy dwellings than those built in the stereotyped fashion.

Another important section of the by-laws is that dealing with the width and construction of roads, and here the influence of the Garden City movement and the lessons which have been taught by the leaders of that

movement have induced the Local Government Board to recognise that cheaper roads than the usual by-laws prescribe are amply sufficient for the necessities of many districts and areas, and will be even better adapted to enhance the health and enlarge the amenities of the district.

The local authorities are advised to reconsider the treatment of their by-laws already in force, so that the improved conditions of Garden Cities and Garden Suburbs may be obtained.

In this way very considerable impetus will be given to Garden City planning, inasmuch as it has been conclusively shown by Mr. Raymond Unwin and others that, given the possibility of cheaper roads amply sufficient for their purpose, the limitation of the number of houses per acre to a healthy maximum becomes a profitable policy for the land owners.

After dealing with construction and road-making, the Board's circular refers to the desirability of greater flexibility in the administration of the by-laws, thus recognising that no matter what by-laws are made there should be provision for the relaxation of the stringency of their provisions when circumstances arise to render this advisable.

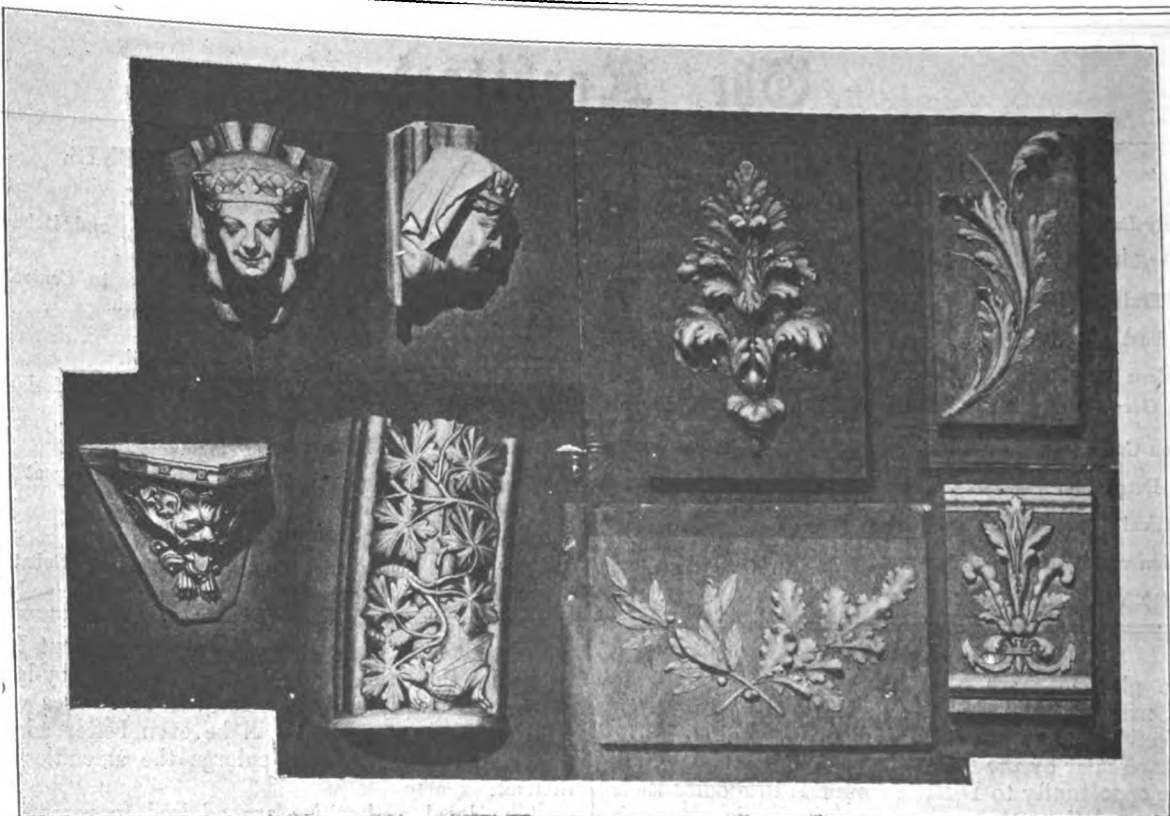
The circular of the Local Government Board, therefore, opens the door to much-needed improvement; first, in the drafting of by-laws suitable for a particular district instead of being based upon cast iron regulations, which were intended originally for urban building; and second, in the possibility of a common sense, give-and-take administration of such by-laws as are enacted, thus recognising that circumstances vary, and improvements in the construction of buildings and of roadways are continuously being made.

It is with regard to the second of these improvements that we fear there will be the greatest difficulty.

It is an easy thing to find men who can act as building policemen simply to see that the law is carried out strictly in accordance with the letter, and many of the so-called surveyors who are at present entrusted with the carrying-out of the building by-laws in rural districts and who are supposed to devote all their time to that duty for very modest salaries, although perfectly capable of doing what is now required of them would be scarcely men of sufficient experience and sound judgment to administer by-laws on a give-and-take basis.

They are quite capable, for example, of seeing that a 14 inch wall has three courses of footings and a bed of concrete of a specified thickness and width beneath it; but if they are asked to approve a bed of concrete without the footings, although it would obviously make a better support for the wall, they would in many cases scarcely be able to form a correct judgment as to what width and thickness that bed of concrete should be.

Since the old Metropolitan Board of Works has been superseded by the London County Council as the authority



SPECIMENS OF WORK DONE IN THE TRADES' TRAINING SCHOOLS' WOOD CARVER'S-SHOP.

for carrying out the Building Acts in London, there has been a change in the policy of selecting and appointing district surveyors, which illustrates the difficulty we foresee with regard to the administration of rural by-laws. The district surveyors of old used to be and some few still are architects in practice of good position, and in addition to their own business superintended the administration of the Building Act in their particular district, but now the modern district surveyor is an official who devotes all his time to policing building law in the area in his charge.

The old-time district surveyor was to a considerable extent independent of the income from his district, and regarded this as supplementary to his practice. The modern official is wholly dependent on the fees of his office, and dare not, therefore, risk censure or deprivation by the exercise of his judgment in permitting any departure from the letter of the law, although such departure might not vitiate its spirit, but feels that he must adhere strictly to the actual wording of the Act he administers, even though it may involve absurdities in compliance.

So, also, has it been in the rural districts. The surveyors are men who stick to the literal interpretation of by-laws, because that way only safety lies for them. If the administration of rural by-laws is to be given more elasticity as the Board's circular suggests, that elasticity can only be imparted by the judgment of architects of sound knowledge and experience.

It would be difficult to at once get rid of the officials who have been appointed, and the only way that we can see by which the desirable consummation can be effected is by the institution of a means of appeal to selected architects in private practice, who would have the power of permitting reasonable departure from the letter of the by-laws.

There are now all over the country a number of architects in practice who are especially conversant with the needs of their particular districts, and amongst them can readily be found men of sound judgment to whom the appeal could safely be entrusted. The present surveyors could still be retained as policemen, whilst the practising architects would act as magistrates in building law.

It would, of course, be advisable, if not necessary, that the architect who acted as magistrate should be debarred from private practice in the actual area of his

jurisdiction, just as were the old-time district surveyors of London. If the districts were made small there would be no hardship in this.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

WHEN we prescribed a water-colour drawing as the subject for the holiday month of August, we did not anticipate the phenomenal downpour that has been experienced this year. The fact that there has been too little sun and too much water to render colour enjoyable, or even observable, is probably the cause of the small response that has been made to our invitation this month. Had we anticipated rightly the weather we would not have chosen as subject the exterior of a building. Our stipulation that the drawing was to be on a large scale has apparently been read by some of our contributors to mean that it was to be made to scale.

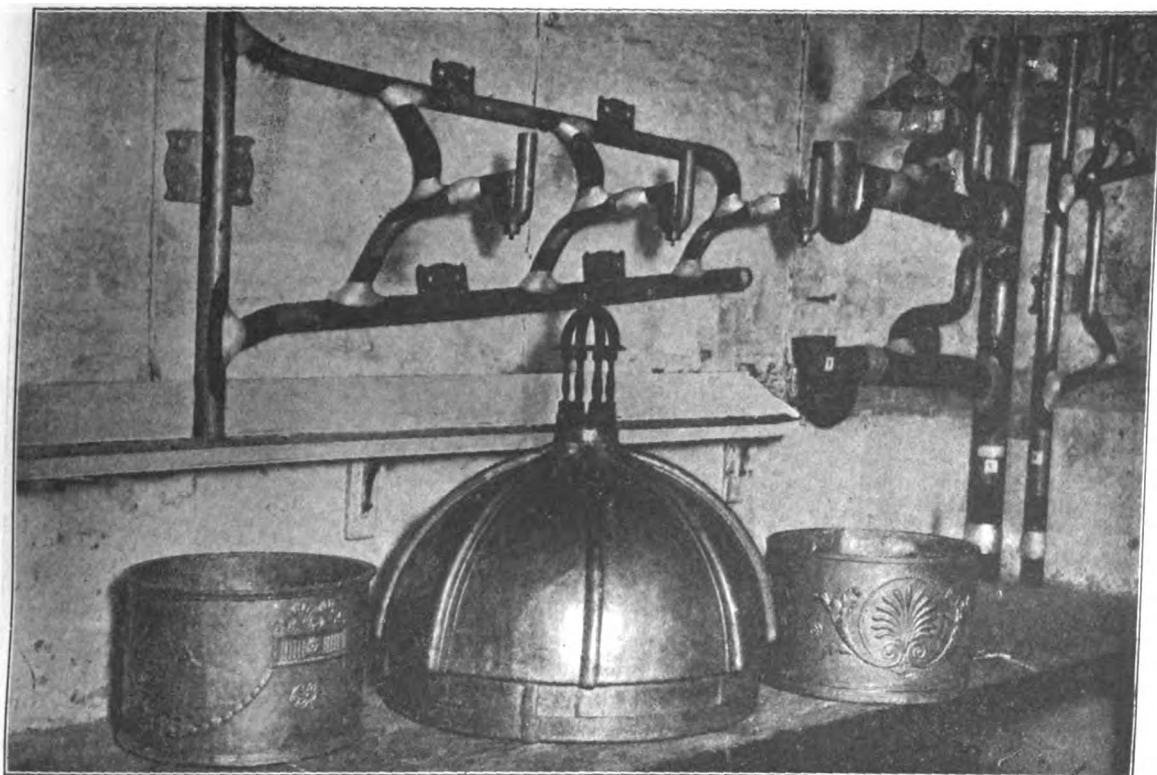
"Plato" has sent a drawing of the west doorway of Magdalen College Chapel, Oxford, in which the colour is well handled, but which suffers from a picturesque point of view, and also as a record by the elevational character of the presentment.

"Alpha" has sheered clear of too diagrammatic a rendering in his drawing of the central portion of the south front of the Jesus Hospital, Newcastle-on-Tyne, but his colouring suffers from a too rigid adherence to the conventional purple shadow. The picture lacks strength and richness.

"Chelt" has made a real water-colour sketch of a Tudor courtyard at Hampton Court Palace, and has attained a fair amount of skill in handling his brush, but there is a lack of harmony in the key of his colouring. The greens, the reds and the purples do not synchronise in tonality.

"F. M." has quite mistaken the subject, and sends us a coloured elevation, and conventionally coloured at that, of a front of the Almondbury Conservative Club. When we ask for a water-colour drawing we want a representation of architecture from a pictorial standpoint, and desire more emphasis on the water-colour than the drawing.

We have decided to award a prize of one guinea to "Chelt" and half a guinea each to "Plato" and



SPECIMENS OF WORK DONE IN THE PLUMBER'S SHOP.

"Alpha," but as the drawings are not suitable for reproduction without spoiling their effect, we shall be unable to follow our usual practice in this respect.

TRADES TRAINING SCHOOLS.

THE Trades Training Schools, which are maintained at Great Titchfield Street, London, by the Worshipful Companies of Carpenters, Joiners, Painter Stainers, Plaisterers, Tylers and Bricklayers, and Wheelwrights, are continuing to do excellent work, as would appear from the report of the judges on the examination of the productions of the various classes during the past year.

The trades for which classes are held, and on which reports have been made by the judges, are those of carpenters, joiners, masons, painters, plasterers, plumbers, smiths, stone carvers, tilers and bricklayers, wheelwrights, wood carvers, and electric wire men.

There is besides a life class in which modelling is done by craftsmen of the trades in which the production of artistic forms is a necessity.

It is unnecessary for us to quote these reports in full, as they all show that good work has been done, in many cases an advance has been made, and in a few there are openings for further improvement, which have been pointed out by the judges.

The report of the Director, Mr. H. Phillips Fletcher, deals with the work of the current session, and enumerates much of the work which is in hand.

It is evident from these reports that the classes are appreciated by the craftsmen for whom they are intended, and in many cases they are as full as the space available in the schools will permit.

The prizes for the past session were distributed by Lieut.-General Sir Robert S. S. Baden-Powell, K.C.B., K.C.V.O., when he gave the following address, which contained much wise appreciation of the spirit that animates and makes successful the Trades Training Schools of the Worshipful Companies of London.

Lieut.-General Sir Robert S. S. Baden-Powell said: Mr. Chairman, Ladies, and Gentlemen,—I come here, not to lay down the law, to praise or blame, but I come rather as a student, and certainly as an admirer of the students in these schools, because I know myself the value of handicrafts and craftsmanship on a higher plane than the mere earning of a livelihood. I believe this kind of work is the best character-making ingredient that we have in our methods of education (hear, hear), and I am longing, like many others, to see

our country keep up her reputation as the country for character. The nation that has the most character is the one that is going to win in the battle, or race, or competition for success in the world, because the life of a nation is very like that of an individual.

Take any individual from the lowest beginnings—he does not succeed in life because he learnt his A B C, his arithmetic, or his writing better than his neighbour at school. It is not always the clever fellow at school who gets on, it is the clever one outside the school, the one who has the character for thoroughness in doing his job, for sticking to his work when things look bad, for having the pluck to carry things through, and for having reliability. We want to keep everyone of our men with character in them, and then our nation will stick in its place in the competition of modern days.

I have just been learning a lesson in character from your Chairman, when he was entertaining me at dinner. He was telling me of his own father, how he had made his way through difficulties at the beginning. He forced his way through and came out on top, and died as an old man in prosperity and in honour, having made his own way in the world without a helping hand. It is an inspiring example for men to make their life and career a success. I believe this training school that you go through develops character in a man, and will make for more than mere monetary success. It will cause his ultimate career to be a real success, before he passes out of this life. I have had a great admiration for craftsmanship all my life. I have tried being a craftsman, and thoroughly enjoyed it; and I have known the fame of British craftsmanship. I have travelled a good deal and seen the work of foreigners, and I know how good they are in certain things; but they have not the imagination, they have not the self-reliance and adaptiveness in them which one finds in the British-born man. I only hope that we may keep up the same spirit and attainment in the rising generations. Of course, machinery and civilisation rather tend to put men in one groove, and to take away from them that heart, that imagination and interest in doing their work thoroughly, which they would otherwise have.

Character and craftsmanship have pulled me out of a tight place, for at Mafeking, with which you probably associate me best (applause), you may remember we had to hold out against a large number of enemies with a handful of men, none of whom were trained regular soldiers. They were almost all working men, and the most useful of them were our handicraftsmen, the railwaymen in the workshops. They did a tremendous lot of useful work

B



SPECIMENS OF WORK DONE IN THE STONE-CARVER'S SHOP.

behind the scenes, which enabled the men in the front to hold the place properly. I have given a lecture on this subject before engineers, merely from an engineering point of view, but there is one little point I can remind you of—namely, that we made our own gun, and our own ammunition. When you start to make a gun out of nothing and ammunition out of less (laughter) you can understand what the difficulties are, unless you have British handicraftsmen to do it. The difficulties did not daunt them. They knew we wanted a gun, so the first thing they did was to tear out a steam pipe from an engine, and make that the bore of a gun. Then they took down some iron railings; they heated them up, welded them on, and wrapped them round this steam pipe to strengthen it. They took a second lot of rails and wrapped them round and shrunk them on, and bound them in place by castings made of brass, and then brazed on a big block of brass at the butt to make a breach. The trunnions they rove on, and eventually made a very formidable-looking gun indeed. When they mounted it upon the wheels of an old thrashing-machine and started to fire it, the order was "Everybody take cover." Several times it went off all right, but it suddenly went off at the wrong end (laughter), and blew the breach out. We then put on a pair of hinges, and tried to make a breach-loader, but it blew the hinges off. We then fixed ropes from the muzzle to the breach, which effectually held the gun so that it could not burst any more.

We next had to manufacture ammunition—we had to make gunpowder. Our chairman comes from a place where they teach officers in the Army how to shoot rifles and how to make gunpowder. I was there many years ago, and we learned our work theoretically rather than practically. We did not have to make gunpowder, but we were taught all the different handicrafts that we should have to use and the different processes which bring them into touch with each other until gunpowder is produced. We remembered these processes by a little sentence, "Many men use fresh dirt"—the initial letters of those words meant the different processes. M stood for melanite, and the M in "men" stood for mixing. (Laughter.) "Many men use fresh dirt." What the "u" in "use" stood for I never could remember. I was hauled up for this letter "u" several times. First of all, we made our charcoal. It ought to be made out of willow wood, but we made it out of gum trees. There was not much sulphur in the place—no mines there: though some people said it was "a hell of a place" we had no sulphur—(laughter)—but we got sheep dip, and that did very nearly as well. We dried it out and got the sulphur out of it, and so we went on.

It was by these fellows turning their handicrafts and their resources to account that we actually managed to make our own ammunition. When the enemy fired their shells into us, we took them and melted them down and made moulds, and converted into fresh shells the proper size for our own gun. I think the blast furnace we manufactured was a sight for sore eyes. (Laughter.) We took the cistern out of the roof of a house and lined it with the fire-bricks out of a locomotive. The channels through which we pumped the air were made from the Westinghouse brake pipes. We jacked up the old locomotive, set the wheels going round, and so contrived a fan, which blew a fierce blast into our home-made furnace, and it worked perfectly well. (Applause.) Now, that gun you can see any day in Whitehall, with the shells we manufactured, and it is a good example of what men can do with good craftsmanship, putting their minds into their work. Not merely taught by rule of thumb, but thinking for themselves, they can turn their hands to anything which a crisis demands. I am very pleased indeed to see that your training here encourages this spirit, and if a man shows genius in any particular direction he can develop it instead of being tied down to certain forms and rules which must be adhered to.

I admire you men greatly for going to the schools and improving your knowledge during your own time and at your own expense to try and make yourselves better craftsmen than you were before. It is going to tell on the nation in the future, when men take up their work in that spirit. I can assure your master, who was kind enough to allude to the Boy Scouts to-night, that in the Boy Scout training we do not go in much for military work, but we do go in for handicraftsmen and handicrafts. I attended a little time ago an exhibition of work done by Boy Scouts in Bermondsey. They had a splendid exhibition of the things these lads had done in trying to make themselves good craftsmen, and some of it was very good work indeed. They were, like you, training themselves up to be handicraftsmen outside their ordinary work in the schools or workshops, and thus, without knowing it, forming their own characters. A fellow who can strike out a line for himself is forming his own character, and he makes a good character; he cannot help it. A great many of those boys, by going in for different kinds of handicrafts, develop good habits, and it stands to reason that there will be precious few of them loafing about a public-house or at street corners with their hands in their pockets. (Applause.) They have all got some work to do in the world, and this gives them more and more interest in life as they go on, and a more satisfactory life it is in the end.

Now, we hear a great deal said against soldiering, and I know it has its bad points in that it tends to make a man too

much of a machine. It is necessary for each man to be good individually and to use his own initiative, so we do not want to make him part of a machine. At the same time, military training is a very good discipline for a man. Through it he becomes loyal, carries out his orders because it is his duty, and learns to become what is really of practical value, a good citizen. I was in a big factory in the North some time ago, and I was surprised to hear from the manager, who was not a soldier himself, that he would not take any man into his factory except those who had had military training, because he found that they always did a little more than they were paid for—(laughter)—and you will do a little more than you are paid for if you are the men I take you to be. They are accustomed in the Army to earn their money. Soldiers, as you know, in peace time get their 1s. 3d. a day, and reckon that as their pay and work up to it. They do their drill, the barrack square routine, they learn their shooting, their riding, how to clean their boots and buttons, and many other things. But when they go on active service they forget all about their pay, they still get the same amount, but they risk their lives for it. They will pull a comrade out of the most dangerous position, they mean to rescue him though it cost them life or limb, and they do it because they have got the right spirit in them, the spirit of the true soldier, loyal to his officer, loyal to his pal, and loyal to his country, and they do a little more than they are paid for. It is very fine to see them carry that same spirit with them when they go back to civil life. They are accustomed to doing something more than they are merely paid for, and they take a pride in their job. In this case the test came, not long ago, in the time of the strike. The strike had nothing whatever to do with that factory or the work carried on there; but some of the strikers, pleased with their success, went to the workshops and said: "You men have got to come out." Well, those fellows looked out from inside and said: "If we come out it will be to duck you in the river. Go along and play, we are busy here." (Laughter.) And they went on with their work and continued to be busy.

That is what pleased the owners. They found the men were ready to stick by them in a crisis, and the men knew that their employers were ready to stick by them in times of poverty. It was "give and take" on both sides, and doing just a little more than they were actually paid for. I have travelled a good deal abroad, and although I love the foreigners and have a great affection for them—we have got Boy Scouts in pretty nearly every country under the sun—yet I cannot help recognising, and they do too abroad, that in British work there is a certain amount of extra good quality which goes beyond what the men are actually paid for doing. The workmen abroad put in very good work, but they do not put in more than they are paid for. In British manufactures, as a rule, you get good quality, which is only gained from the fact that the men take an interest in their work; they take a pride in it, they would be ashamed of anything shoddy. They put extra good work into it and turn out a good article. It carries through in all lines of life: we should all do a little more than we are paid for. There is a tremendous lot of voluntary effort and keenness throughout the country. You fellows who are going out into the world as good craftsmen, I hope will remind yourselves sometimes to put an extra effort into your job; because it is a noble thing to carry out good work, and in doing so you will be doing a great thing for your own character, for those who use your work, and for the reputation of your country. The line you have taken up now is splendid: I hope you will stick to it in the way you have begun. I thank you very much. (Applause.)

HOUSES PAST AND PRESENT.*

In choosing as a title for my address to you to-night "Houses Past and Present," I was fully conscious that the subject could not be completely dealt with in any single lecture or course of lectures. I had not even any immediate intention of talking about houses at all. I felt merely that there were certain things connected with building which I wanted to say to you, and the title of my paper seemed to be one which, while I could not exhaust it, would at least give space for some discussion. If I ever become wise enough to be a professor, I should like to be a professor of "Things in General," for I have always found it impossible to separate the various activities of man into watertight compartments.

And this activity of house-building depends on so many other things. Its consideration raises at once questions with reference to education, the ritual of daily life, and many other matters.

In the modern world, it seems to me, house building is not taken seriously enough as a subject of art. Now, as I believe that art should find (as it has in the past always found) its main expression in the building of houses, which is man's way of decorating, or disfiguring, the world we live in; and as I think it does not matter so much what we put in our picture galleries as long as our streets are full of living art, I will ask you first to consider the houses of the past, by which I mean the houses built in those dark ages of old England before people became sufficiently enlightened and sufficiently educated to build the modern Board school and to live in the modern jerry-built suburban villa.

It is a subject one feels more inclined to dream and meditate over than to speak about; for no words, no words of mine at least, can hope to do more than faintly suggest to you the beauties and peculiar charm of these old houses. The genius of man has found its expression in many forms of art, in great pictures and in great musical compositions; but to my mind pictures and music, much as I appreciate them, seem but shadows compared to the realised conception of a house.

It is a living actual thing: a dream (it may be a nightmare) translated into the very stuff of the world itself. It surrounds and envelops us with an atmosphere which becomes a part of our daily lives, intimately interwoven with all that we do and all that we think. This is much; but a beautiful house means much more even than that. Since the measure of the joy it gives us is but the sum of the joy which its makers have expressed in creating it, it implies the existence of man the creator, instead of man as the factory hand. It does not connote the division of the industrial world into the two opposing camps of Capital and Labour: the driver of the machine on the one hand, and on the other, man, with all those infinite possibilities of his degraded by a system which makes him a cog in a machine. Instead of all this, it postulates a world of craftsmen, of artificers, working in the spirit expressed by Kipling's lines:

"Who, lest all thought of Eden fade,
Brings Eden to the workman's brain,
To, Godlike, muse o'er his own trade,
And, Manlike, stand with God again."

It was the noble part of such a company as this Carpenters' Company to foster and encourage that pride and joy in creative work which was the mark of the old craftsman. It was concerned not so much with a minimum standard of wages as a minimum standard of work, and it seems to me that the chief need in the industrial world of to-day is to study the spirit and methods of our old trade guilds and seek to reconstruct some such system in the training of our craftsmen, to give them back that lost heritage of theirs—those deep and satisfying joys which good work alone can give. And the net result of this system in the past was their old houses, which we have lost the art of producing.

Before we consider them a little more closely, I should like to insist that in studying old houses we must not be content to be merely archaeologists, and to make nice distinctions between Jacobean work and Elizabethan. Nor must we be too much concerned with those salient features which were but the passing fashions and frills of a period. We must go deeper than that, and try, if we can, to fathom the heart of the mystery of the old house. What is the secret of its elusive charm, and what can we learn from it to make our building better here and now? Let that be our central object in considering the old house.

If we study it carefully, we shall find the first lesson we have to learn from it is the absolutely vital importance of building technique. It is not too much to say that the whole of our modern methods and ideals of building are wrong artistically, and we touch here the very root and centre of the failure of modern work. We architects may make beautiful designs on paper—we may make sketches which look quite fascinating—but when you see these designs interpreted by the modern high-class builder you must end by sorrowfully inscribing "Ichabod" over the doorway, for all the glory has departed—all the gilt has been rubbed off the gingerbread.

Go to such an old house as Haddon Hall, for example. Apart from the various architectural features which were but passing fashions, where does the root of its beauty lie? Is it not in mere building? Every square yard of its masonry is full of interest and vitality and subtle variety.

* A Paper by Mr. M. H. Baillie Scott, read at Carpenters' Hall.

And what is the principle that underlies it all? We hear a good deal of talk nowadays about texture, as if that were an end in itself instead of a result of right principle. And the principle appears to me to be that building should be an education of materials. And just as the ideal human education is that which evolves all the best in the individual, instead of levelling all to the uniform standard of the particular school, so the ideal education of a material consists in shaping it to its place in the structure with only such sacrifice of its individuality as its function there demands. That was always understood in old work. In modern work the desire for mechanical accuracy has led to the obliteration of the characteristic qualities of materials. I have spoken of this matter here before, but it appears to me to be so absolutely vital that I feel bound to repeat myself. In this education of a material, then, I mean that the work done in it should help to express those of its qualities which are peculiar and unique. A brick should look like a piece of burnt clay—a bit of mother earth, moulded to man's ends, but still of the earth, earthy; stained and marked, it may be, in its ordeal by fire. As such it is much more than a mere coloured rectangle. We can read its whole life story in its form and surface.

A comparison between the methods of the past and present in building discloses all the difference between a living art and a dead formula. Take, for example, the treatment of a floor in an old cottage. You will not find it done by rule. The joists will be full of character. Their outlines will have the slight undulations suggested by the grain. They will not be exactly straight, or exactly level. You may go in a dozen cottages, and each will vary in treatment. There will also be pleasant undulations in the plaster, and nowhere will you find the brutally rigid, mechanical outlines of the modern room. Turn to any modern text-book on building, and you will find no hint conveyed to the student that construction is anything else but a dead and trite formula. Joists—mere scantlings without any possible kind of interest—are shown there, placed 15 inches apart from centre to centre, and below these the inevitable plaster ceiling, with its badly-designed moulded cornice and so on. There is no suggestion that the whole art of building begins in the placing and shaping of its materials in such ways that the characteristic beauties of each are drawn out. You will not find a line to suggest that building is an art at all, but it is presented as a peculiarly dismal science. Building thus being made a dead letter, our architects are reduced to conceal the poverty of essential building by all kinds of histrionic superficial adornments. Just as in the modern stage we are driven to conceal the absence of real acting by all kinds of stupendous productions to deafen and confuse the observer, so in modern buildings we seek to split the ears of the groundlings by buildings of vast scale. And the people are duly impressed, and if the judicious grieve, after all they are in the minority.

The next vital principle we may learn from the old house is the principle of relation. By which I mean that the beauty of anything is not so much intrinsic as relative, and the beauty of a building depends on the reciprocal relation of its parts to one another, and then to the relation of the whole to its surroundings. This principle is well understood in modern art in a detached and disjointed way. The painter, within the confines of his frame, understands it, but not beyond that limit; and so we have in the modern picture gallery the last word in the confusion of the arts, where there is no general atmosphere of related harmonies, but only a wild jumble of competing individualities. The art here, however good it may be, has no definite place in an ordered world, and no relation to a great scheme of things.

How different was the old way, when pictures were wall decorations and part of a social order! For, just as the proper conception of a society is one which embraces and finds a place for each human being, however humble, so in the world of art we want an equally all-embracing conception centred in the house grouped in definite relation to other houses and to Nature, and adorned with art which claims no individual and detached existence, but owes its chief beauty to its harmonious relations to surroundings.

In the country house this principle of relation will find itself chiefly expressed by the connection between the house and Nature. It is in this respect mainly that the modern country house fails. Let us have another glance at Haddon Hall. As you approach it it appears so much a part of the wooded hill on which it is built that it is hardly noticeable, and then a nearer inspection seems to show, in the technique of the building, a close harmony with Nature. It would seem almost to have been created by the same hands which

made the trees and hills, or as if some inspired conjuror had placed there just the very building that the imaginative would have demanded. If we next consider the houses which we architects build in the country, shall we not generally find that, however well designed they may be in themselves, they leave us with the impression of a cockney importation from the town of the latest developments of architectural thought there? Especially is this the case with the formal eighteenth-century scheme now so much in vogue. This has its place in the sun, no doubt, and there are natural sites which seem to demand just this kind of house built in the old sympathetic way. But when you come across one of these formal schemes in a Surrey wood, with a few ragged pines in the front garden, it makes the whole of its natural surroundings appear to want grooming.

If what the painter feels about a wood is expressed in the picture he paints, if what the poet feels about it is expressed in the song he sings, so the architect's commentary on its beauties should be expressed in the house he builds there. It should be sylvan, romantic, and as much at home as the nests of the birds are. To encounter, in such a place, the modern country house of the usual type is to experience much of the same feeling of repulsion that the remains of a picnic convey. But, after all, the woodland villa can do little more than prick its ears above the trees which screen it. What shall be said of the modern house on the open hillside? Here you may observe perhaps one of the latest and sweetest things from the garden suburb—what is technically called a "repeat order"! Its original did not look so bad in the garden suburb, but here its little gabled prettiness seems out of place. And so it would seem that here, too, as in the wood, some inspiration must be sought from Nature, and some hint taken from those old local buildings which always seem to express so well the spirit of the places they beautify.

Houses in windswept, open spaces near the sea and on exposed hillsides alike seem to demand a certain ruggedness of aspect. They should look like hardy outdoor open-air creations, and not seem to demand protection from the elements; and inspiration for buildings in such positions might well be sought from the old castles, which seem to add so much beauty to wild and rugged places. By level pastures and slowly-winding rivers, the personality of the house may become more kindly and gentle, and the less rigorous outlines of timber and tile take the place of the more austere qualities which belong to rugged stone and slate.

(To be concluded.)

ILLUSTRATIONS.

THE GREAT DINING-ROOM, WILTON.

THE drawing by Mr. Albert E. Bullock, A.R.I.B.A., illustrates the author's series of articles on "Interior Decoration," and the subject is described on page 139.

RIPON CATHEDRAL: THE SEDILIA.

THIS is a very unusual and interesting example of the mingling of two different styles. It is supposed to be fifteenth-century work, although the ogee arches point to much earlier times. The mouldings of the shafts are very shallow, and the detail of the capitals is late, while the work in the canopies is early, which almost leads one to suppose that the sedilia was not entirely built but only restored in the fifteenth century. It formerly stood in the next bay of the choir west of the present position, where it was removed in 1868, when the cathedral was restored by Sir Gilbert Scott. The gables and pinnacles are new work. The piscina is now in the floor (as shown on plan), and the piscina recess is used for the chalice. A curious feature about the sedilia is the series of grotesque figures on the underside of the ogee canopies. The drawings, by Mr. E. H. Gibson, here reproduced, were awarded a prize in *The Architect Students' Sketching and Measuring Club*.

SIR THOMAS BROCK, R.A., has been commissioned by the Belfast Committee in charge of the *Titanic Memorial* to prepare a design and execute the work.

THE Royal Sanitary Institute have published particulars of their fifty-fourth course of lectures and demonstrations for sanitary officers. Part I. opens on Monday, September 16, and Part II. on Friday, November 15.

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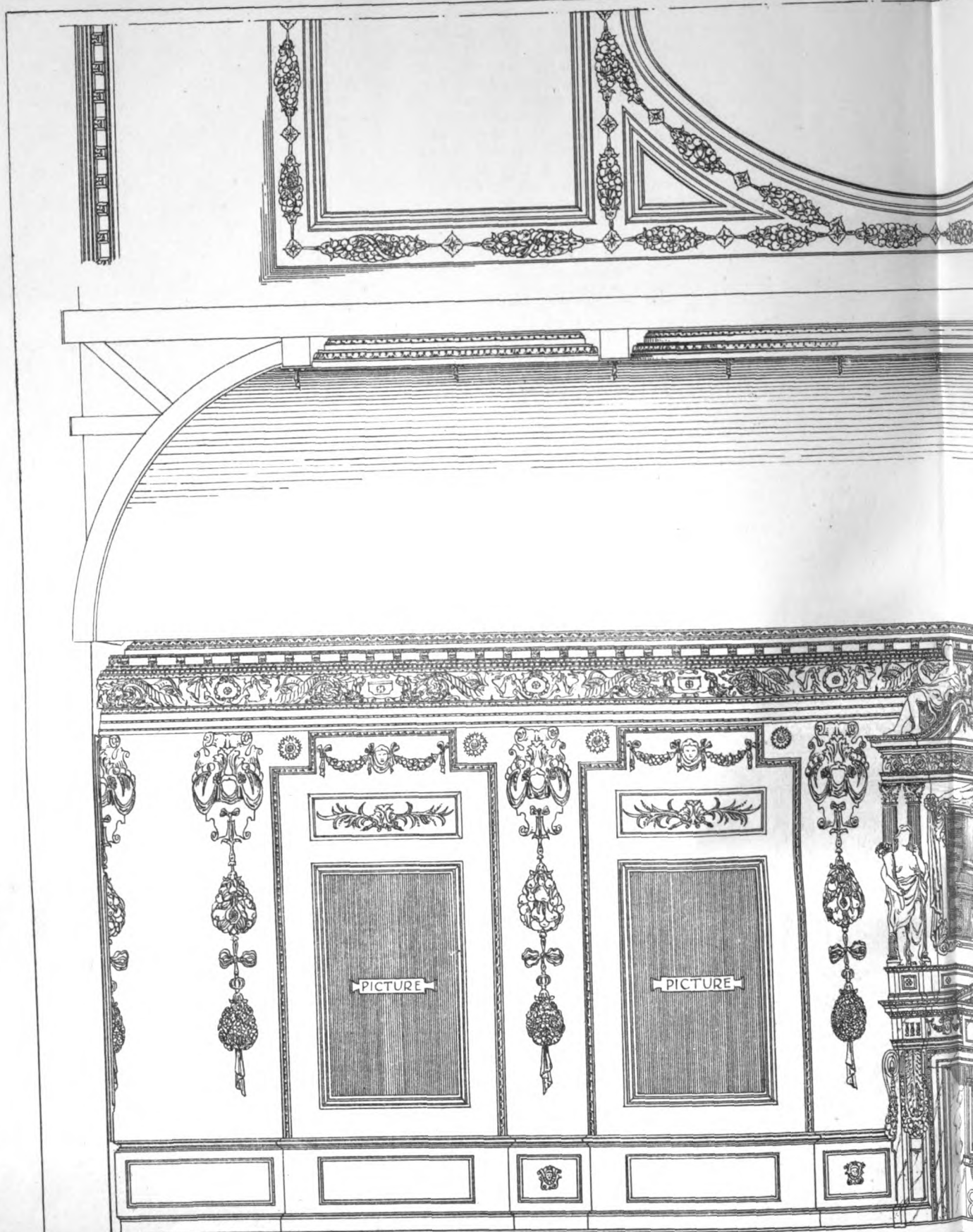
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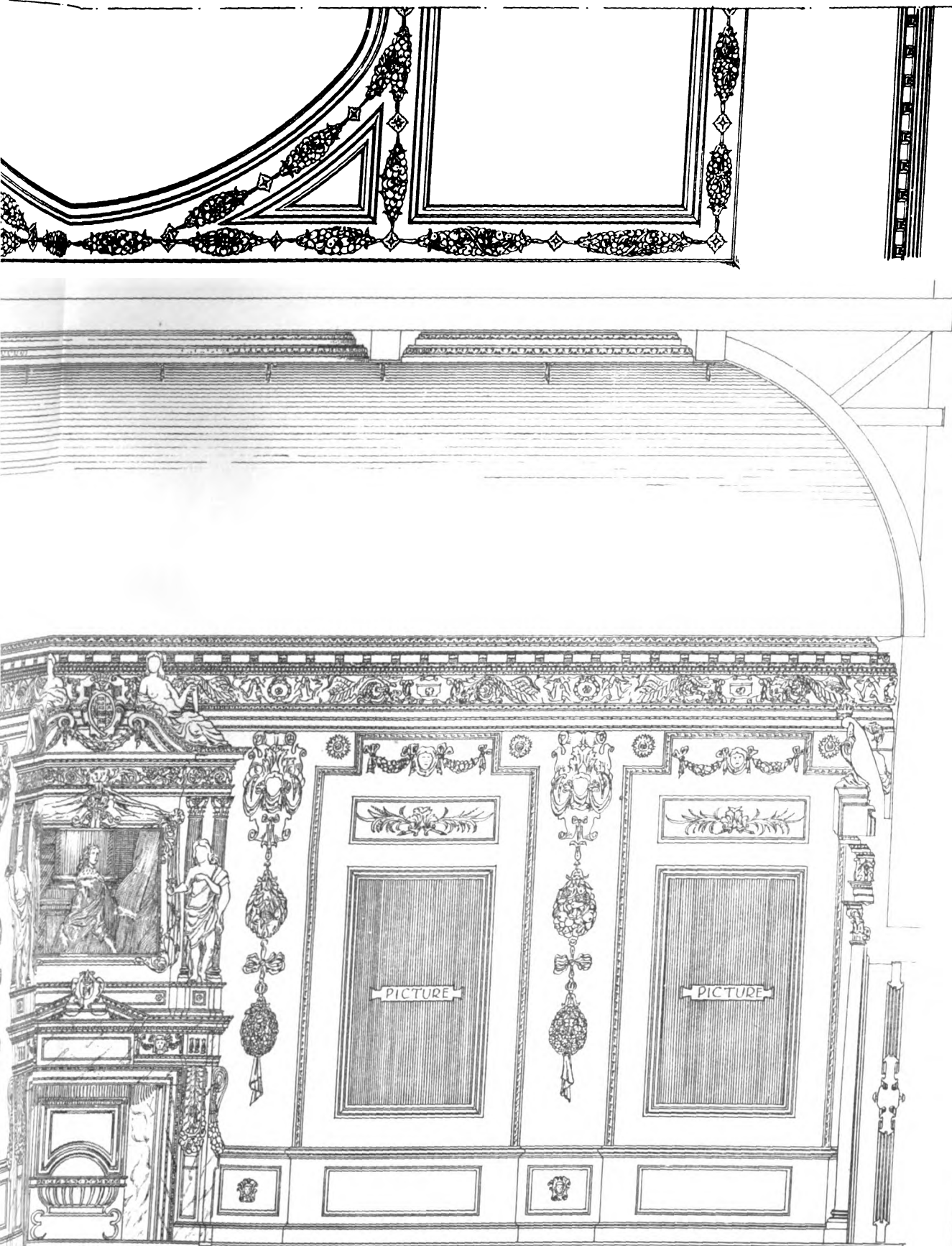


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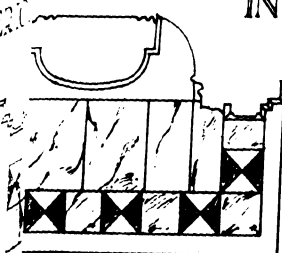
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DINING ROOM · WILTON.
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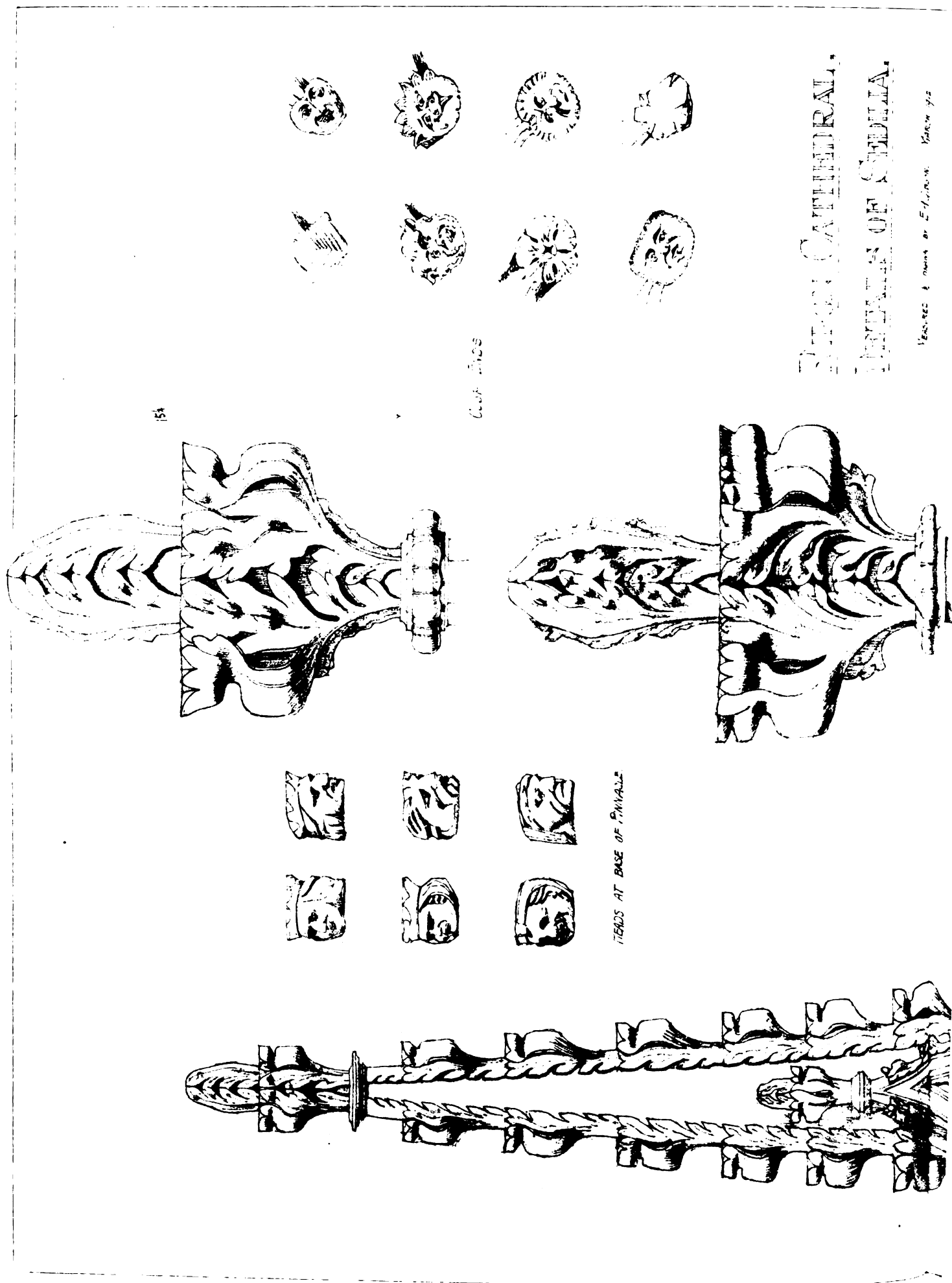
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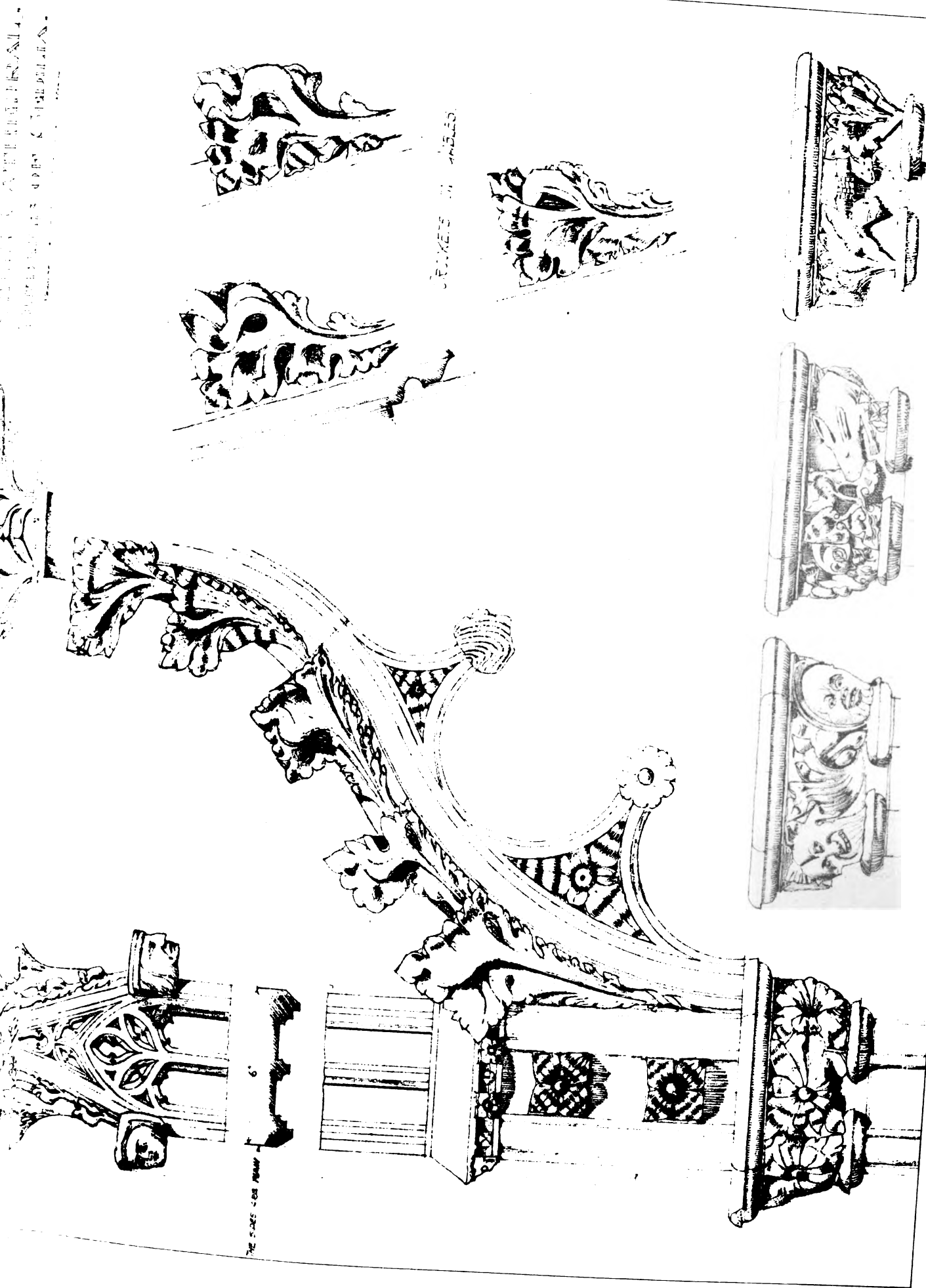


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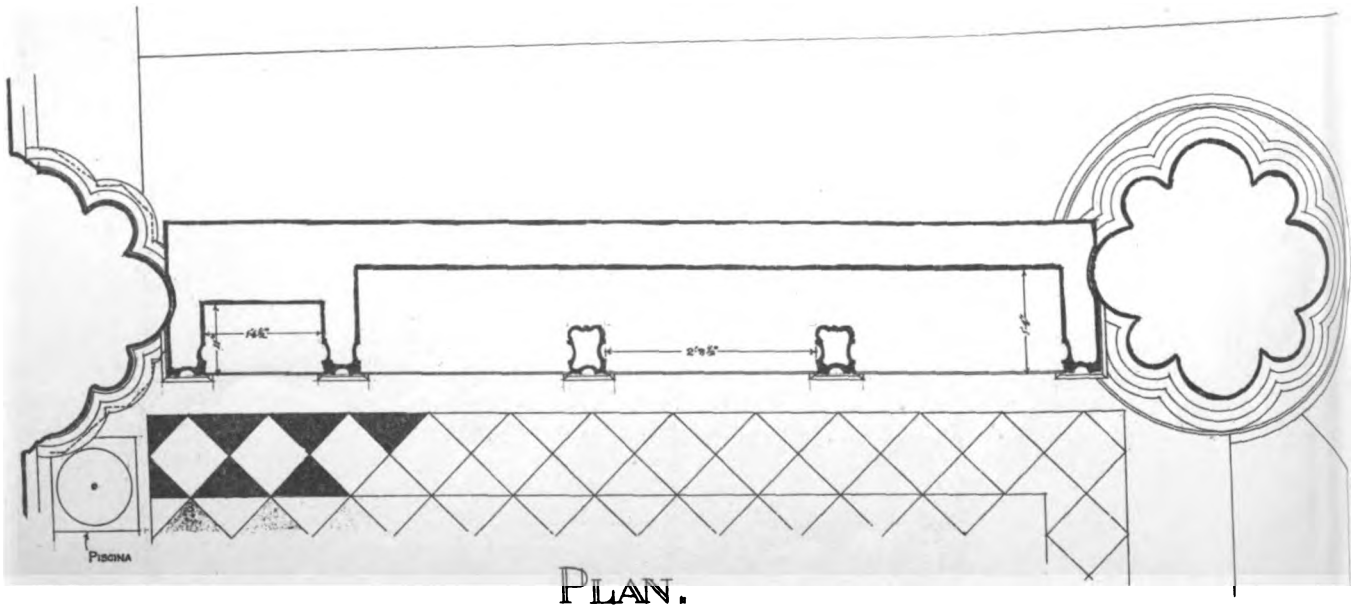
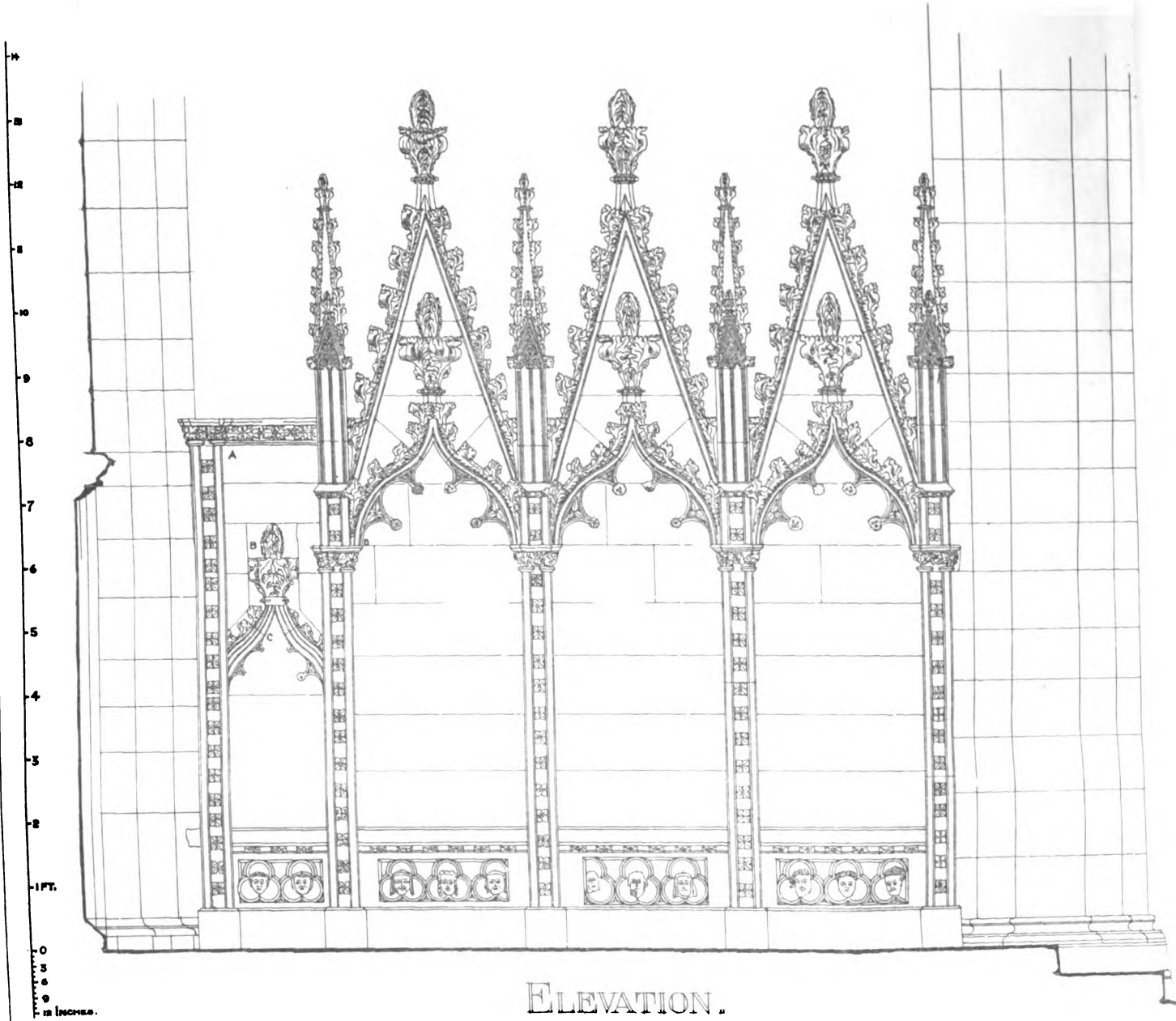


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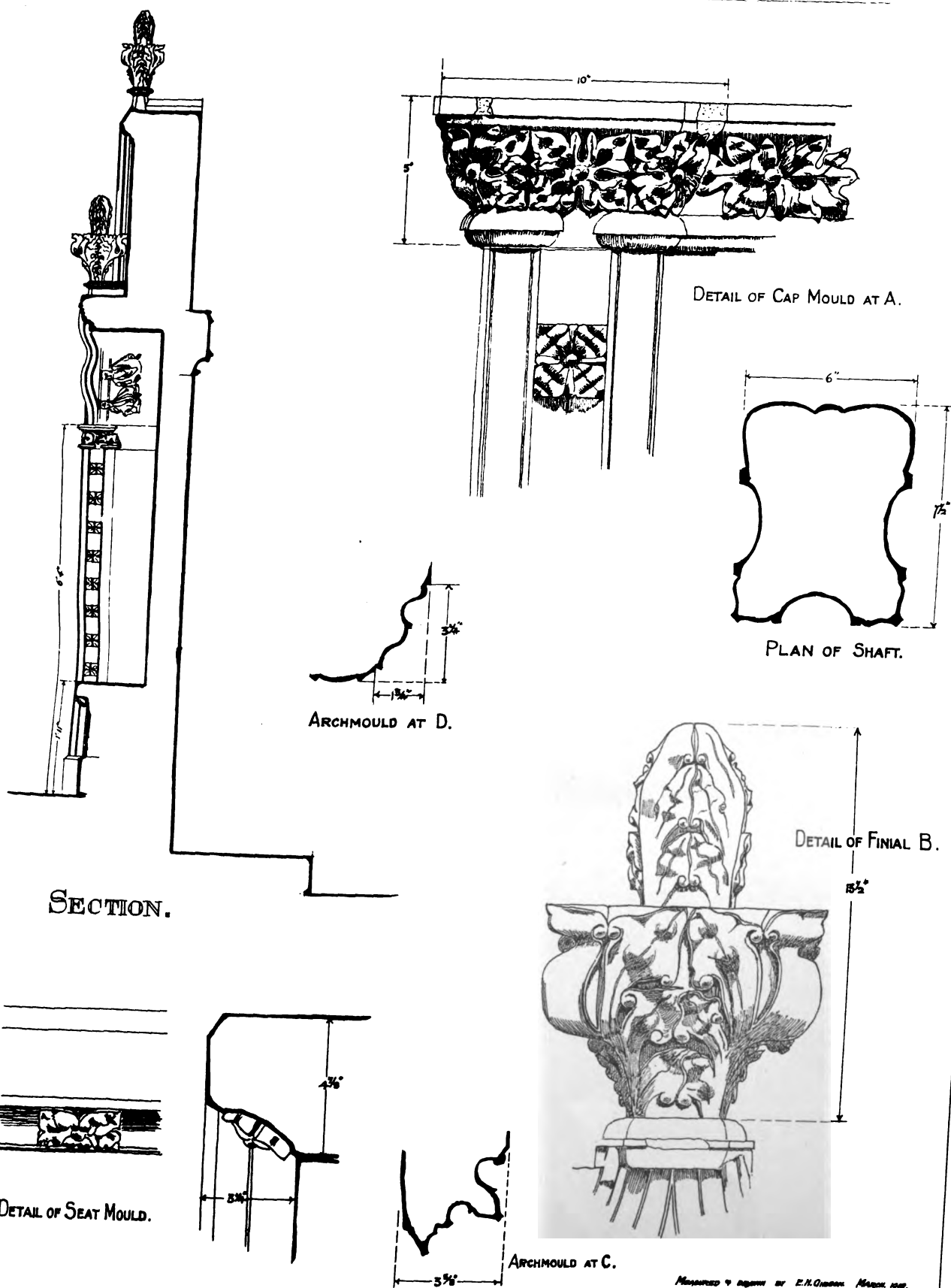
"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.
Prize Drawing by Mr. E. H. GIBSON







RIPON CATHEDRAL. THE SEDILIA.



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INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—II.

(Continued from last week.)

TISSINGTON HALL, Derbyshire, built by Francis Fitzherbert (about the time of Charlton, Kent), is a good instance of clear-cut panelling with Ionic pilasters to the drawing-room, the hall panelling being somewhat exceptional in having the panels carved with intersecting arches to each bay in the manner of the Early Norman arcading, only plentifully supplied with key-blocks. The plastering appears to be rather later.

The staircase of the Strangers' Hall, Norwich, is a transitional example, having square and turned balusters with pendants and string carving of early influence. The hall was originally built in the sixteenth century by Nicholas Sotherton. It was owned in 1612 by Francis Cock, who built some additional rooms and the staircase upon his accession to the Mayoralty in 1627.

There are several examples of the period at Cambridge, notably Bishop Williams' additions to St. John's College in 1623, the library door of which is flanked by pilasters having arabesque filling. The archivolt over the door head is ornamented with shields carved with the Tudor rose and fleur-de-lis, with carved angel heads in the spandrels. At Clare College the bookcases, or "classes" as they were then called, are panelled in the Jacobean manner, and the cresting is of the type known as floriated strapwork, although it is an early Charles I. example executed in 1627. A mural tablet in the ante-chapel of Peterhouse College, dated 1632, exhibits similar influence, and is given in Mr. Henry Tanner's book entitled "English Interior Woodwork."

Raynham Hall, Norfolk, erected by Inigo Jones in 1630, is executed in that bold style associated with his name. The hall forms a noble entrance for an English gentleman's residence. The ceilings here and in the saloon differ from the work of the Jacobean period in being of bolder ribbed formation, the full modillioned cornice returning around the inside of all the coffered and sinkings. A feature which is typical of the work of Inigo Jones and was adopted by his followers appears first on the frieze of the Banqueting House, Whitehall, in the form of a female head flanked by two festoons. This is the motif of the frieze in the hall at Raynham. Another detail of significance is the triple husk ornament frequently seen on the consoles of chimney-pieces and occasionally incorporated with the design of plaster friezes. This latter was a favourite with William Kent, who made frequent use of it at Rousham Hall and in the cabinet room at Houghton Hall.

The chimney-piece in the library at Apethorpe, an addition of the seventh Earl of Westmoreland about 1730, contains the same motif.

In the basement of No. 65 Lincoln's Inn Fields there is an early chimney-piece, which is probably a survival of the original house erected in 1658-9 by William Hodges, having features in common with those in the dining-room and the saloon at Raynham.

The decorative scheme adopted in the hall is based on Classic principles, and presents a very dignified appearance. Plain Ionic pilasters line the walls, carrying a fully moulded and modillioned entablature, over which is a clerestory with enriched panels, and containing on one side windows to light the room, which is 50 feet long by 25 feet wide. The doors giving access to the various rooms have simple pediments, the doors themselves being of polished hardwood. These doors and the pictures are the only portions of the room of a darker hue, the wall being finished with a flatted white tone. Of the other rooms the red drawing-room and the dining-room have the principal ornaments of the plaster work and the chimney-pieces picked out in gold. The ceiling of the saloon is a particularly fine composition. Queen Anne's Bedchamber, an equally dignified room, is hung with tapestries. The original windows were probably casements with leaded lights; the openings were subsequently filled in with modern sashes, the introduction of which was much later in the century.

Stanway House, Gloucestershire, was commenced the same year as Raynham Hall, while the Royal Palace at Kew, a brick-built house, contains ceilings modelled in 1631.

Old Somerset House occupied Inigo Jones' attention from 1632 for many years, and was eventually removed to make way for Sir William Chambers' noble structure.

The Ambassadors' room at Knole was added in 1635, the

year of the commencement of Westwoodhay House, Berkshire. The Barber Surgeons' Hall shared the fate of Old Somerset House, and in 1638 Inigo Jones made additions to Kirby Hall.

Wilton, Wiltshire, was some eight years in building, being designed for Philip, the first Earl of Pembroke (Lord Chamberlain).

This building is the finest expression of the Italian manner of Inigo Jones, and still remains one of the most complete examples of his work, which was not confined to the house alone, but extended to the grounds, which are laid out with great care for architectural fitness.

The room illustrated by means of the accompanying measured drawing is known as the "Double Cube room,"* owing to its dimensions, being 60 feet long by 30 feet wide and 30 feet high. The drawing given by Campbell in "Vitruvius Britannicus" places the chimney-piece centrally, but this has been shown by Messrs. Triggs and Tanner in "Some Architectural Works of Inigo Jones" to be erroneous. The ceiling panels were designed for family portraits by Vandyke, which were omitted. The swags and other ornaments are made in a species of composition and applied.

The whole scheme is carried out in white and gold. The adjoining room, known as the "Single Cube room," is similarly treated. Some designs for the ceilings at Wilton are contained in the Worcester College collection. For a room of its size it is the most successful treatment ever adopted, giving a palatial effect, which feeling is carried out in the remainder of the residence. The work was superintended by John Webb, the kinsman of Inigo Jones.

The pulpit of All Hallows Barking distinctly shows the influence of the work of these men, especially in the swags and wreathed linen ornament. The work was executed in 1638, and was evidently the outcome of the advice given in 1634 by Nicholas Stone, for which he records having received a "rondell of canarie wine (28s.)." The font cover here is a later work of great beauty, either by Cibber or Gibbons.

Ashburnham House, Westminster, is attributed to John Webb (born 1611), the pupil of Inigo Jones, but he more probably finished it from the designs of the master, the interior being of great scholarly refinement, which we do not find with Webb's work executed immediately after Jones' death. The building is in excellent preservation, and is notable for its fine ceilings and especially the staircase, which has the distinction of being occasionally emulated by modern architects.

Inigo Jones was engaged on Lindsey House, Lincoln's Inn Fields, and Coombe Abbey, in Warwickshire, in 1640. Swakeleys, near Hillingdon, Middlesex, has a close resemblance to Raynham externally, but the interior is mostly of some decades later. There is a certain charm about the screen at the end of the hall, although built of wood and stucco, and polished to resemble marble. It formed one of the additions of Sir James Harington.

The original house was built by Sir Edmund Wright in 1638. The dining-room panelling dates from about this time. The saloon ceiling, with its fifteen panels, so closely resembles the ceiling of the staircase at Coleshill that it might reasonably be assumed to have been designed by Inigo Jones. The whole room is panelled in a very quiet and chaste manner. The walls and ceiling of the grand staircase were painted by Robert Streater after Sir Robert Viner purchased the house in 1665 from Lady Harington.

Robert Streater was born in 1624, and studied under Du Moulin. He excelled in decorative painting, and has been extolled for his work at the Sheldonian Theatre, Oxford, where some of his best examples remain. Whitehall gives the following couplet in praise of this artist:—

"That future ages must confess they owe
To Streater more than Michael Angelo."

However this may be, he had his followers in the personages of Verrio, Laguerre, Ricard, and Thornhill. He was constantly employed by Sir Christopher Wren at the New Theatre and the chapel of All Souls, both at Oxford, the ceilings at Whitehall and at St. Michael's, Cornhill. He also painted the house of Mr. Povey, the friend of Pepys, at Lincoln's Inn Fields, and the cedar dining-room at Sir Robert Clayton's house, where he painted the subject of the Gyants war, since removed to Marsden, near Godstone. At Kensington Palace his paintings to the staircase, guard chambers, &c., were executed in 1692 for £3,599.

Claydon House, Middle Claydon, Buckinghamshire, is an early seat of the Verney family, whose genealogical tree runs

* See Illustrations.

back to the fifteenth century. The house changed hands in the sixteenth century, having been leased to a kinsman of the name of Giffard for a term of 100 years. Before the expiration of this lease in 1620 Sir Edmund Verney bought out the tenants, but does not appear to have carried out many alterations there. Much of the present house and decorations date from the time of the Adam Brothers, and will be dealt with in describing that period. The house is very sumptuously finished, exhibiting, however, that want of unity and repose associated with so many of the old mansions of England which have had periodical additions, the interiors of which suffer from the eclectic offshoots of different styles, regardless of any harmony.

Several houses in the parish of St. Giles-in-the-Fields date from about 1640, of which Lindsey House and Newcastle House, both on the west side of Lincoln's Inn Fields, are probably the most notable. From volume III. of the "Survey of London" it appears that the first-mentioned was apparently a speculation of Sir David Cunningham's, who was the rector of Old Charlton Church, and a great friend of both Inigo Jones and Nicholas Stone. When the latter erected the tomb to Sir Adam Newton at Charlton church, Kent, in 1630, he recorded the name of his patron in the following terms:—"For ye which my very nobell friend Ser David Cunningham payed me £180." The church, by the way, is worthy of note, being an early renaissance building with a brick tower and semicircular nave arcading on Tuscan formed pillars. The pulpit is an excellent example of the joinery of early Charles I. origin, while, in view of the friendly connection above referred to, and the fact that Inigo Jones had a house in the locality, it is possible the design may be traceable to this source.

In 1641 Sir David Cunningham sold his house at Lincoln's Inn Fields to Henry Murray, one of the Grooms of his Majesty's Bedchamber, who in turn sold it to the Hon. Charles Rich in 1652, in whose family it remained until 1664. It then passed through various hands, until it was sold to Robert Bertie, the fourth Earl of Lindsey, in 1704, by Lady Holman, from which time it has been known as Lindsey House. The original building was designed, as previously implied, by Inigo Jones, and had in front six rusticated piers capped with vases (of which piers only the two outside ones, connected with the party fence walls, now remain). These piers were filled in between with wrought-iron work forming a screen. The house was subsequently divided into two, and numbered 59 and 60. The alterations then made naturally sacrificed much of the interior decorations of Inigo Jones' design. The alcove in the front room on the ground floor and the chimney-piece in the back room of No. 59 are probably additions by Isaac Ware after the alterations carried out under his direction in 1752.

Newcastle House, Nos. 66 and 67 in the same Square, also formed together one house originally, being erected on the corner site by William Hodges. The Earl of Powis employed the Dutchman, Captain William Winde, to rebuild the premises after the fire of 1684. In 1693 it became the official residence of the Keepers of the Great Seal, and Sir Christopher Wren was commissioned to carry out the decorations, for which work he employed one Abraham Jordan, a carpenter. In 1705 it passed into the possession of the Duke of Newcastle whence the name of the house was obtained. The decorations of the interior are mostly of the type invented by the Brothers Adam. Part of the ceiling of "the Peacock room" and a chimney-piece of a room on the second floor date from the earlier occupation.

During the Civil War there was very little progress in building works. In 1642 Nicholas Stone assisted Inigo Jones to bury his fortune. The year 1647 marks the deaths of Huntingdon Smithson, Nicholas Stone, and his architect son, and the birth in Holland of Grinling Gibbons. Two years later the Commonwealth was established.

At Coles Farm, Box, Wiltshire, there is an interesting ceiling and frieze dated 1649. The additions to Forde Abbey and the building of Coleshill, Berkshire, mark the close of the career of Inigo, who died in 1652.

The additions to Cobham Hall, Kent, are probably the work of John Webb, who completed the staircase at Coleshill after the death of Jones. The staircase ceiling has the usual treatment of modillioned cross beams with an oval centre and laurel wreaths in the eight surrounding panels. The cornices are all heavily enriched, especially that to the hall.

Webb executed some additions to Drayton House, Northamptonshire, for the second Earl of Peterborough in 1653, the chimney-piece in one of the state bedrooms being from his designs.

(To be continued.)

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

III. — ARCHES.—WINDOWS.—TRACERY.—STAINED GLASS.

(Continued from last week.)

THE Greeks, who, if they did not invent, at least perfected the several orders of architecture, never in later times seem to have sympathised at all with the Roman modification of them, most of which were consequent on the use of the arch. Their Byzantine art owes but little to Rome. It was, in truth, a genuine invention of a style developed out of the Greek, but one in which the arch was an essential feature, and in which the cornices and mouldings, the columns and their capitals were all modified to suit it.

Their decoration was almost entirely Eastern, both in its *motif* and in its mode of execution. Their development was a radical one; for in place of the old Roman and old Greek construction of plain walls and columns carrying only a dead weight, Byzantine art is remarkable for the extent to which it treated construction in a new fashion, as an affair of weight and counterpoise. This was provided for in the arch and pier, in the dome and its supports. The Roman basilica required no great scientific skill for its erection, whilst the Byzantine buildings dealt with some of the most difficult problems of construction, and really adumbrated the triumphs achieved in such scientific and delicate constructions of the Middle Ages as Amiens and Chartres, Rheims and Westminster.

Between the time of Constantine and Charlemagne the Roman buildings were not passing through any development. The long series of popes, from the beginning down to the time of Charlemagne's conquest in the seventh decade of the eighth century, had done more in the way of conversion of existing buildings, or robbing antique temples of columns and what-not for use in their new basilicas, than in attempting to erect new buildings exhibiting any new school of architecture. The basilica, with its long ranges of columns, ending with a throne or an apse, supplied all that was needed for Christian worship, and the multitude of old fragments available led for ages to the construction of buildings in which the whole of the details are antique, and in which the general form is founded also on an ancient one.

The long ranges of columns and arches of all sizes and sorts are often very imposing, but the interest of such churches is rather archaeological than architectural. The interest of the fragments of which they are constructed is great. They sufficiently evince the slovenliness of much of the Roman work of the period, but at the same time the freedom from all such rule as the exact dimensions, proportions, and decorations of the various orders. It is not too much to say that no two capitals in one of these churches are alike, whilst the remains are, with few exceptions, of Ionic, Corinthian, and Composite, and not of Doric. As an example of this, San Pietro at Toscanella, near Viterbo, may be adduced.

In all the Italian work, evidently founded, to some extent, on the Gothic buildings of the north, such as Florence, Orvieto, and Siena, the arch mouldings are invariably a repetition of those on the jambs, the capitals being treated simply as imposts; and although the system has been reprobated, one fails to see why such abuse should have been showered upon it. Where the arches are stilted, the usual springing is marked with true artistic feeling, only by a small subordinate moulding of thin detail, often forming a base or plinth to the arch mouldings.

The feature which most marks all Italian Gothic is the indifference to the true use of the Pointed arch. Everywhere arches were constructed which could not have stood for a day had they not been tied together with iron rods. There was a great lack of that sense of all the unities of art which made a northerner so jealous to maintain the proper relations of all parts of his structure. Even in Nicola Pisano's works the arch moulding rarely fits the capital on which it rests.

In comparing Italian with Northern Gothic, the student cannot fail to notice the difference in the windows, not only as regards their relative frequency and size, but also their architectural character. In the great northern churches the architects delighted in large and elaborate windows. In Italy they are as a rule fewer and far less grandly dimensioned. The brightness of the sunny south taught its

builders to exclude light and glare, and the use of stained glass was not encouraged. It is questionable whether such use would have been consistent with the methods of internal decoration common in Italy. Great spaces of wall, covered with fresco painting, might not unreasonably be thought inimical to the adoption of stained glass, through which a bright light would cast hues of undisguised variety on the carefully-studied harmonies of the painter. In the upper church of San Francesco at Assisi vitreous and mural decoration are both lavishly employed. Yet, although the writer has had the opportunity of visiting that fairy church of glowing and translucent colour under every condition of light, the one seemed to have no ill effect upon the other.

In England, and still more in France, the introduction of stained glass affected the design of churches to an enormous extent. If the northerners had not the mural polychromy of the Italians, their architects were no less fond of colour, and they found in large traceried windows generally, and often exaggerated clerestories in particular, a field for the application of colour on a large scale. That with which the Italians covered their walls their northern contemporaries placed in their windows.

In early Italian work the tracery is treated simply as a piercing in a slab of stone, and even in much later work—as in the cathedral at Siena, the Or San Michele at Florence, and the chapels of Sta Maria della Spina and Sta Maria della Rosa at Lucca—the traceries are still merely pierced slabs of stone, and not constructed traceries. The windows in the clerestory of Siena Cathedral are, however, noticeable as being, together with the aisle windows of the Duomo at Florence and Lucca, singularly beautiful in character, though their traceries play a very insignificant part. The windows in the nave aisles of the cathedral at Lucca—the best and simplest of the class—are wide, chamfered lancets, on each side of which a detached shaft, standing in advance of the wall and supported by a corbel, carries a pinnacle, the finial of which is a figure of a saint; a course of dark marble round the edge of the arch takes the place of a label in defining its outline, and a crocketed pediment of steep pitch, over the arch, and dying against the pinnacles, completes this very simple yet effective design.

On the south side of the nave of the cathedral at Arezzo there is some fine late thirteenth-century tracery in the windows, all of which are filled with superb stained glass of an Early Renaissance character. Here one very large two-light window has a bold central shaft and arches to the lights, and a circle in the head; but the soffit of this is square in section, and into it is inserted a wheel of tracery, also very square in section, and appearing as if it had been cut out of a plate of stone and inserted after the window was built. The whole resembles some windows on the south side of the nave of Paderborn Cathedral, in Westphalian Prussia. In all these traceries at Arezzo it may be observed that the piercings are invariably sharp and truly geometrical, and that the ogee line is never used, except in the head of a trefoil, and both these are facts for which these old Italian architects cannot be too highly praised.

The constant use of shafts with capitals in place of moulded monials, and the very frequent insertion of a bar of tracery across the middle of the height of the window, are two other peculiarities of the Italian mode of fenestration. The former feature does not seem to be so well suited to ecclesiastical as to domestic work, as it generally accompanied the system alluded to elsewhere in these articles—of fixing the glazing, whether plain or coloured, in wooden frames behind the stone-work, and hence seldom looked well in church windows.

The windows in the Duomo at Florence are examples of this peculiar treatment. Viewed externally they consist of two narrow lights with a little tracery in the head of the containing arch, but from within they appear in the form of one large lancet. Many visitors to this famed Duomo are puzzled how the glass is arranged in these windows, which have a detached column instead of a mullion, but the curious in such matters will find that the glazing is at least one foot behind the column, and that it continues equally behind the tracery; that is, the stained glass is comprised in one large broad lancet, and about one foot in front of it is a column supporting unglazed tracery. The glass is fixed by means of lockets and stanchion-bars, exactly like those in England and France. The lockets-bars are about 2 ft. 2 in. apart, and the lockets project, and are fastened on the outside. Between every locket-bar are three stanchion-bars, also on the outside, and the lockets themselves are about 7 in. apart.

The stained glass in these windows is beyond question the most magnificent in Italy, where this branch of ecclesiology, for reasons already stated, was never pursued with the same ardour as in northern countries.

In the Florence Duomo the windows show simple lancets with generally two figures side by side and a third surmounting them. The borders are deep, and the shadows thrown by the outside traceries are rather advantageous than otherwise, for they darken the upper portions of the glass. The openings being very large, the colours are more marked than in northern work, but then each colour is subdivided into a great many different tints, so that a jewel-like effect combined with great distinctness is produced. These Florentine windows appear to have been made from slices of large gems cut out and formed into histories and figures, just as they make the Florentine mosaic of the present day. When the writer visited the Opera of the Duomo he was shown some pieces of this glass; it was blue, of a greenish-grey tone, and very like what the late Sir Edward Burne-Jones employed, the effect of which is to bring up the other colours and render them more brilliant, whereas when a bright blue is employed for the background a contrary effect is produced.

The majority of the windows in the Duomo of Florence are said to be the work of Francesco di Domenico da Gambasso, a Florentine who had settled in Lubeck, but who was invited to his native city during the early part of the fifteenth century, for this purpose.

Donatello and Ghiberti are said to have had a hand in some of the later windows, but there can be no doubt that as many different artists were employed upon them as there were architects to the building. Indeed, in many cases the professions were identical, and the same man could equally design a building, paint the walls in fresco, fill the windows with glass, and make the stone and marble express his thoughts by means of sculpture. Giotto was one of these, and the practice was continued long after, as in the case of Vasari.

The last two bays of the nave of Florence Cathedral have sham windows. These are painted in distemper upon canvas stretched on a frame, and the glittering effect is produced simply by glueing on pieces of coloured tinsel for the high lights. The black lines representing the lead lines are very thick, and there is no tinsel used on the faces or hands, but where the tinsel is employed it is always in small pieces, placed an eighth or a quarter of an inch apart. So well are these windows executed that most visitors to the Duomo take them for real glass in the first instance.

Besides that in the Duomo there is much magnificent mediæval stained glass in Sta Croce and Sta Maria Novella, in Or San Michele, and in the circular window of San Spirito.

At Lucca the ancient glass in the apse of the cathedral, and in the church of San Giovanni, is very beautiful; so is that in the circular window at either end of Siena Cathedral. The two-light Middle-Pointed window that has been inserted in the Romanesque apse of San Paolo a Ripa at Pisa contains half figures of saints of great richness and brilliancy of tincture, and in the aisle windows of the Duomo there is much stained glass, brilliant in colour but confused in design. That in the east window of Prato Cathedral is somewhat coarse and crude. The large windows in the apse, clerestory, and south aisle of Arezzo Cathedral, but especially one at the east end of the south choir aisle, are of extraordinary richness and splendour; while in the same city a circular window in San Francesco, and several in the Annunziata, will repay careful study. Then there is the vast six-light Gothic window at the east end of San Domenico at Perugia, and, lastly, the entire series of windows in the Upper and Lower Churches of San Francesco at Assisi, principally of the fourteenth century, and of a very superior character.

If we glance at the ground plans of Italian Gothic churches we shall find nothing to delight us like we do in those of Canterbury and Lincoln, both churches of growth, or in those of Chartres and Rheims, both designed and carried out as we see them now, *d'un seul jet*.

The columns in Italian Gothic churches are widely spaced, so as to diminish the number of vaulting-bays, and to make the proportions of the oblong aisle vaulting very ungainly.

Still, there are beauties which must not be overlooked. The sculpture of the capitals, the beautiful, if not very varied, cloisters, the portals and smaller doorways, the canopied monuments frequently outside the churches, the skill in the manipulation of coloured materials, the grace of the campanili which vary considerably in the several districts—the Lucchese, the Genoese, the Florentine, the Roman, and the

Umbrian—cannot fail to elicit our admiration, and to store the mind with a vast fund of material.

Allusion has been made to the exquisite skill with which the Italian Gothic architects handled those precious materials of which their country offers so abundant a supply. That they were before all others devoted to the display of colour in their works admits of no dispute, and throughout the peninsula the bountiful plenty of Nature in the provision of materials was only seconded by the zeal of the artist. Just as there were in parts of Germany, France, Spain, and England large districts where no stone could be had without the greatest labour and trouble, so brick had to be used, as in Venetia and Lombardy; and here the reality and readiness which always marked the mediæval workman led to his at once availing himself of this natural material, and making a feature of his brickwork.

To sum up, it must be said that the Gothic of Italy has no such grand works to show as more northern countries have. The buildings were seldom beautiful as complete works of architecture.

Allowance has to be made at every turn for some incompleteness or awkwardness of plan, design, or construction. There is no attempt to emulate the best French plans. Milan Cathedral, magnificent as its scale and material make it, is clumsy and awkward both in plan and section, though its vast size makes its grandeur, internally, well-nigh unsurpassed for religiousness and solemnity. San Francesco at Assisi is only a moderately-sized Early German Gothic church of mediocre design converted into splendour by its coloured decorations. At Orvieto, a magnificent west front is put without any abutments against a church whose only merit is mainly that it is large and in parts beautifully outlined—the eastern front, though far less sumptuous than the western, is a nobler and more truthful piece of work—but wants poetry of design. The later Tuscan buildings are far finer, notably the cathedral of Lucca, whose interior is unsurpassed by any of its age in Italy for elegance of proportion, sobriety of detail, and, it may be added, picturesqueness. The other buildings, such, for instance, as the vast aisleless churches built by the religious orders, and which confront us in almost every large town of Central Italy, are poor and meagre in various parts of detail and design, and are only redeemed from failure by the picturesque monuments built against their walls, by the work of the painter, and by their furniture. In fine, Gothic art, as we look at it, was never properly understood in Italy, and, consequently, never reached perfection. *(To be continued.)*

VENTILATION AND WARMING OF CHURCHES.*

THERE are many churches which, from a hygienic point of view, are so unsatisfactory as to impair very seriously their efficiency as places for public worship.

The chief reasons which tend to make churches unhealthy are:

1. Large open timbered roof spaces, in which the air is chilled and down-draughts produced; inner vaulting in stone or wood below the outer covering, or a ceiling half-way up the slope of the roof reduces the chilling process considerably. As there are often no effective outlets for foul air in these roof spaces, it is impure air that descends to the breathing line to chill and poison.
2. Clerestory windows or lofty ground-floor windows also chill the air near them, which, thus becoming heavier, descends upon the heads and shoulders of the congregation below. The down-draughts from this cause, and from roofs, are often moderated by frequent use of the building and continuous warming. In too many churches service is conducted on Sundays only, and fires are not lighted until a few hours beforehand.
3. No provision made for fresh, warmed air to enter near, or below, the breathing line—e.g., at back of radiators.
4. No openings to allow of cross-ventilation just above the breathing line as in windows of all modern, well-equipped schools, but rarely found in churches. The absence of these openings causes the air to be stagnant, disagreeable, impure, and dangerous to health.
5. Damp floors and walls, which are apt to cause chills and colds in persons sitting near them. These are chiefly to be found in ancient buildings.

* Abstract of Paper presented to the York Congress of the Royal Sanitary Institute by J. Osborne Smith, F.R.I.B.A. (Fellow).

6. Hot-water pipes in channels sunk in the floor and covered by gratings. These channels, being usually in gangways, are receptacles for dust and dirt from boots, clothes, and the sweepings of the floor generally; when the floor is washed, dampness is added to the heated dust in the channel and upon the pipes. Thus conditions antagonistic to health are set up, to say nothing of the added danger when consumptives occupy seats near the channels.

7. Pits below the floor containing many gas jets for warming purposes.

8. Hot-air ducts, which are never, or hardly ever, cleaned out. It is not at all unusual to find ducts intended to convey fresh warmed air, neglected and dirty.

9. Boarded floors with open joints. It is not always borne in mind that there may be a mile or two of joints filled with dust in a church where boarded floors are used. Sometimes near each row of seats there are two or more holes in the flooring, about one inch in diameter, for ventilating the space under, which in course of time becomes a large dustbin only four or five feet below the breathing line.

These insanitary and unhealthy conditions prevail to-day, more or less, in most modern churches and other places of worship. Some of the older churches have worse health conditions even than those just described.

The requirements necessary to make the interior of churches healthy for use and occupation may be briefly stated thus:—

1. Ample means of cross-ventilation from openings in opposite sides of the building below or near the breathing line, in order to get rid of foul air at the very spot where it is generated. Cross-ventilation is also desirable high up near the flat ceilings, or in the sloping roof spaces, the openings being arranged to check or divert downward currents.
2. The inlets for fresh air to be as short as possible, capable of being readily cleaned, well distributed, and allowing at least one foot super of clear opening to about ten people.
3. Adequate means for warming incoming air, so that it may be not only warm but also pure and fresh as possible at the breathing line during services. Warming and drying air is a source of comfort, especially in a damp climate, but the drying can be so easily overdone as to be inconvenient. High temperatures should be avoided, and provision should be made for supplying additional vapour to the internal air when required.
4. Warmth just below open roofs, clerestories and tall windows to prevent down-draughts.
5. Jointless solid floors, which can be readily kept clean.
6. Seats and fittings which do not obstruct the passage of light and air, or hinder the cleaning of floors.
7. Means for preventing the deposit and movement of dust.

In cold weather, warmth, genial, all-pervading warmth is desirable inside churches during occupation; the cold, bracing, breezy air which is so enjoyable when one is moving about is not welcome inside where persons are sitting. Provision, therefore, must be made for:

1. Warming incoming air during the services as well as the inside air before occupation.
2. Preventing the inrush of cold wind currents from windows by fixing hopper lights to direct currents upwards, and from entrances by double doors opening outwards and closed by checksprings, and by placing radiators or stoves near the entrances.
3. Preventing down-draughts by fixing hot-water pipes in roof spaces and below clerestory and other windows.
4. Generous warming apparatus, well distributed, without excessive temperatures either in pipes or warm air flues. As methods of warming we have:
 1. Large close stoves near inlets for fresh air, which are very useful.
 2. Underground stoves, the heat ascending through grating at floor level, are effective, but the air is often too dry and polluted by dust.
 3. Warm air apparatus, by which cold air is admitted either from the church or from outside to a furnace room or battery of large pipes, and discharged into the church through vertical or horizontal gratings. This is usually an efficient arrangement, but the warmed air is liable to be contaminated by passing through flues and over pipes which are cleaned only at rare intervals.
 4. Low-pressure hot-water apparatus with radiators having fresh air inlets. This is effective and generally satisfactory when inlets are accessible for cleaning, and radiators are in suitable positions.

5. Low-pressure hot-water apparatus with pipes in channel. For reasons previously stated this is an insanitary method. It is also ineffective, as the heat given off is generally reduced by the non-conducting matter accumulating on the pipes.

6. Medium-pressure apparatus with small bore pipes next outer walls or in channels, in coils, or round skirting of raised wood floor on which are the seats. A useful and economical method for distributing warmth when pipes are kept above the floors.

By all these methods fresh air can be admitted to be warmed before entering the building, but in many cases this has not been done.

Hot-water radiators to which fresh air can be admitted by short, smooth, cleanable ducts above the floor, are cleanly and cheap; effective boilers are also quite reasonable in price. There is now, therefore, no good reason for placing pipes in underground cellars or channels, or for allowing the bracing air to be contaminated by passing through long dusty flues. Hot-water pipes or radiators can readily be fixed above the floor and under upper windows and roofs.

When designing new churches, provision for ventilating and warming need not add seriously to the cost, and its importance is such that it should not on any account be included in those interesting items left to be done later when money is available.

Much may be done to make church interiors healthy by giving attention to a few negatives:—

Don't have air brought in at floor level from beneath gratings.

Don't put hot-water pipes in channels under gratings in the floors.

Don't cover doorways with curtains.

Don't close all windows or ventilators at the same time; if a south-west gale prevails, those on the north side might be open without discomfort, and vice versa.

Don't try to save fuel by closing all the inlets and outlets for air when the church is occupied; it is false economy. They may be closed when the building is empty.

Don't fail to warm sufficiently a large proportion of the incoming air in cold weather.

Don't suffer down-draughts to exist; they are most dangerous to health, and can be prevented by judicious warming.

Don't fail to warm the triangular spaces in roofs which are open up to the ridge.

Don't have many supports beneath the seats, so that floors can be kept readily clean.

Don't fail to concentrate warming near entrances.

Don't encourage the use of blinds, curtains, matting, wicker seats, or anything which harbours dust.

YORK FIFTY YEARS HENCE.*

Few towns present such an instructive history of town planning as York.

There was certainly an earlier settlement before the times of the Romans, and this is supported by the name Eboracum, which contains the syllables Yorac, the same as Ure, the old name of the river on which the city is situated, and which is still applied to its higher reaches. The very situation of York was determined by the ridges of glacial drift which here cross the valley from Tadcaster to Stamford Bridge. Primeval man in all countries had sufficient intelligence to choose the driest path along the top of the ridges, and the primitive track was followed by the Roman road, of which traces are preserved in the name of Street Houses, where parts of it still remain open as a bridle-path through the fields, though superseded for carriage traffic by the modern road, which follows a less direct line. Such diversions, when the land is unenclosed, are very common, and are often determined by such trivial causes as the old road falling out of repair or being blocked by encroachments. Nearer York I have seen a well-preserved piece of the road crossing Queen Street outside the walls, and it continued straight down Toft Green to a ford at the Guildhall, and so up Common Hall Lane to the main gate of the Roman city. Roman piles are preserved at the Guildhall, which were taken out of the bed of the river at this ford, and the foundations of the gateway exist in the cellars of the insurance office in St. Helen's Square. I could give similar details of several other primeval and Roman roads, but this must suffice for our present purpose.

The Roman castrum, or camp, was evidently most carefully planned. It was rectangular in form, and parts of the foundations of its walls can still be traced from the south-west gate above-mentioned in St. Helen's Square to the Multangular Tower in the Museum Gardens, which was the west corner of the Roman city. From this corner it can be traced to Bootham Bar, the north-west gate, from which led the main road to the north, and much of it is concealed under the present mediæval wall behind the Deanery gardens to the north-east gate in Mr. Gray's stable yard, the road from which led to Derventio (Malton) and the Cawthorne Camps.

Passing Monk Bar, it still followed the line of the mediæval wall till it turned to the south-west across a street which still bears the Saxon name Aldwark (old fortifications) to the south-east gate in King's Square, whence led the road along the ridge to Stamford Bridge, and thence to Bridlington. I have seen Roman piles where this road crossed the foss in Walmgate.

The main street via Principatis still exists as Petergate from King's Square to Bootham Bar, and when the main drainage was being put down in my boyhood I remember seeing a piece of Roman drain exposed at the end of Grape Lane. It was about a foot deeper than the new brick drain, and far more solidly built of carefully hewn stone.

The main cross street started from St. Helen's Square, and parts of it still exist as Stonegate and Chapter House Street. The line of it passes through the choir of the Minster, which is the most recent part of that edifice, and the street was doubtless diverted at the time of its building.

There can thus be no doubt that the Roman city was built on a carefully-thought-out plan, and formed part of an organised system of roads and works constructed to suit the natural configuration of the country. A modern royal engineer could not have planned them better.

And now as to the more immediate present and future.

I have given much thought to the best plan for the development of the York suburbs. During my student's life in London I became familiar with the Bloomsbury squares, which are built on the rectangular plan; and on my first tour abroad in 1869 I was much struck with the construction of Karlsruhe, which is built with streets radiating like the spokes of a wheel, with others connecting them in a circular direction. Both areas had evidently been built brand new on a predetermined plan, but either plan in its entirety was obviously impracticable to be applied to an old straggling city like York.

At present there are a great number of roads radiating from York, some of which, no doubt, require improving or even supplementing, but the great necessity is for improved communications in a circular direction. A vehicle at Acomb, for instance, requiring to go to Dringhouses must come round by York, a distance of two or three miles, though less than half a mile of new road would enable a direct course to be taken at a considerable saving of distance, and almost the same applies to the want of a new road from Heworth and the Malton Road, say, near Elmfield to the North Road at Clifton, connecting with the roads to Huntington, Haxby, Wigginton and Rawliff on the way.

Any new scheme of town planning for York must therefore include, at any rate, one circular road at the outskirts of the area at present built upon, and keep in view the probabilities of another, further out, in view of further developments.

The inner ring might start from Clifton Scope, where a bridge would require to be built, and traverse the vacant land between the Leeman Road houses and the river, to near the waterworks, where it would cross the railway by the existing bridge. The lane from the bridge to the Poppleton Road would require widening and grading. Crossing the Poppleton Road it would go almost due south to the Acomb Road, which it would cross near the present tramway terminus, thereby developing the rising ground west of the waterworks reservoir and the existing road into first-rate villa sites. After crossing the Acomb Road it would follow the line already approved by the Corporation through the Holgate Gardens estate and some fields to Hob Moor, which it would cross to the Dringhouses Road before coming to Mount Villas. The exact point of crossing the railway, and whether over or under, would require consideration. It would then cross Knavesmire, keeping to the north or city side of the round racecourse, till it joined the existing avenue, which it would follow to just beyond the grand-stand. From this point there is a line clear of all buildings beyond the South Bank Estate to the river and across it to the Fulford Road, near the north end of St. Oswald's Terrace. This part of the road should be secured, even if the building of the bridge had to wait some years. Crossing Fulford Road, it would cross fields and Lowmoor nearly to Heslington, developing

* Abstract of Paper read before the York Congress of the Royal Sanitary Institute by Mr. Tempest Anderson, D.Sc.

the tract of land between it and the existing lane, with which it runs parallel. Before quite reaching Heslington it would turn through fields and possibly part of Lowmoor to the ridge beyond Garrow Hill, and join the Hull Road before coming to the Bees Wing Inn. It would cross this road and go right across the low land to the middle of East Parade, Heworth, following almost the line of Bull Lane for the latter portion of the way. This portion would develop some of the best building sites still remaining about York. The low land by the beck should be acquired for a recreation ground, as it is too low to be built on. Some expense would here be incurred in a bridge over the railway, which might have been obviated if the plan had been in existence a few years ago.

Crossing from East Parade at the end of Bull Lane to Heworth Moor along the existing lane would require the purchase of two cottages and a house. After crossing Heworth Moor the road would continue straight across the plateau nearly to the foss, near Yearsley Bridge, where it would join a straight road from the corner of the Malton Road, near Elmfield College, across the foss, in front of Rowntree's new dining hall, to the Wigginton Road at the railway bridge over the Foss Islands Branch. It would cross the Scarborough line by a new bridge north of the existing Burton Lane crossing, which would be diverted to the new road. The road would then continue straight to the North Road, near Clifton Asylum. After it passed the corner of the existing Burton Lane cottages, the ring would leave the above straight road, and a short piece would bring it into Water Lane, and so on to Clifton Green and Clifton Scope, thus completing the circle. The portion of this road beyond Clifton and Burton Lane ought to open out the district around Bootham Stray, which, if properly planned round the stray as a park, ought to make a most attractive residential suburb, and accommodate a number of good customers for our tradesmen.

Mr. T. W. Spurr, city engineer, York, said in regard to town planning in York, some progress was being made in a serious attempt to develop the outskirts of the city on town planning lines. As they would realise, the process and formula to be gone through to satisfy the Local Government Board was not all that could be desired so far as speed was concerned. But at the same time, a very large area in the outskirts of the city was being dealt with and was now almost complete, and would soon be ready for a meeting of the owners early in September. With regard to the new street, it would not stop immediately over the Foss Bridge. The whole of the property was being acquired so that it would link up with Piccadilly, and at the last meeting of the City Council the street was named Merchantgate. It was a fact that the greatest inconvenience they had here was to get across from one suburb to another, and any scheme taken up in York must include this important necessity. What York was short of was a direct communication between the Fulford Road and the Dringhouses Road, but until they could undertake the planning of the city actually it was very difficult to say what would be the best thing to be done.

Miss G. A. Lowe (Warrington) asked, with reference to the erection of poor houses at Hepworth, if they were not going to build them there, where were the people who inhabited those houses to be put? Was it not wiser to arrange some scheme whereby the artisan class could have a sort of a model village? She knew it was the general view for most towns to cater for the better classes, but it seemed to her such a pity that they did not at the same time cater for the lower classes.

Dr. Tempest Anderson, replying, said that question had not been overlooked in York. Mr. Rowntree, of Rowntree's Trust, of which he himself was a trustee, had spent £20,000 in providing for that in arranging the model village. The Holgate Land Company bought a large piece of ground, which they laid out, as they thought, on reasonable lines, for the very purpose of providing small commodious houses and broad streets, with good access to them. The first difficulty was the question of sewage that absorbed a large portion of their capital. Then they were told that they were building those streets a good deal too wide, and a Councillor of the Corporation who was on the committee said: "Who is going to pay for those trees and grass margins? Do you propose to endow them, because it will require another man to do this?" They said they thought that if they could buy the land and make roads that might be sufficient. So that instead of encouragement from certain people they got nothing; they were considered visionaries, and the result was they had to borrow money from the Insurance Company. The dwelling sites did not go off as well as was anticipated, because a thousand workers were taken from the railway works and sent to Darlington about that time. The interest on their loans

increased so much that the Insurance Company foreclosed their mortgage, and the whole concern was therefore taken over by them. But the final thing was that he was left with one or two small lots, and sure enough he had a notice from Mr. Lloyd George intimating an extra tax for undeveloped land. Their experience, therefore, in providing better accommodation without cost to the ratepayers had certainly not been a success. This subject of the planning of York was so important that he would be glad if the Corporation offered a prize or a series of prizes for the best plan which should include that ring he had spoken of, and the other matter. He would be happy to contribute £100 towards such a desirable end.

The Chairman remarked that there had been an enormous provision for the artisan class in all directions outside the city of York.

Dr. Armstrong (Newcastle-on-Tyne) said he thought slum property should be dealt with on the lines adopted by the Liverpool Corporation, which was to provide for the very worst of slum dwellers.

Mr. Brodie (Blackpool) said that in his town they had dealt with the street question in a different way. He saw the owners of the land, and said that if the owners bore the cost of the street up to the width required by the by-laws then the Corporation would pay the cost of making it the extra width. They recently widened a street and put in sewers, and by the sale of the surplus land were able to recoup themselves for the whole cost.

BOOKS RECEIVED.

- "Fire Prevention and Fire Protection as applied to Building Construction. A Handbook of Theory and Practice." By Joseph Kendall Freitag, B.S., C.E., Associate Member American Society C.E., &c. (New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 17s. net.)
- "Estimating. Being the analysis of Builders' Prices. With full information of estimating, containing over 100 analyses, detailing prices and useful memoranda." By Thomas D. L. Piper. With forty illustrations. Part I. (Portsmouth: The Ubique Press, Ltd. 3s. 6d. net.)
- "A Bibliographical List descriptive of Romano-British Architectural Remains in Great Britain." By Arthur H. Lyell, M.A., F.S.A. (Cambridge: The University Press. 7s. 6d. net.)
- "The Original Drawings for the Palace at Whitehall, attributed to Inigo Jones." By J. Alfred Gotch, F.R.I.B.A., F.S.A. Reprinted from "The Architectural Review." (London: B. T. Batsford. 2s. 6d. net.)
- "Staircases and Garden Steps." By Guy Cadogan Rothery, author of "Ceilings and Their Decorations," "Chimneypieces and Inglenooks," &c. (London: T. Werner Laurie. 6s. net.)
- "Iron and Steel Constructional Work." A concise handbook, with examples for practical application. By Karl Schindler. Translated from the German and adapted to English practice by Chas. Salter. (London: Scott, Greenwood & Son. 3s. 6d. net.)
- "County Churches, Nottinghamshire." By J. Charles Cox, LL.D., F.S.A. With numerous illustrations. (London: George Allen & Co., Ltd. 2s. 6d. net.)
- "Seasonal Trades." By various Writers. Edited by Sidney Webb, LL.B., and Arnold Freeman, M.A. (London: Constable & Co., Ltd. 7s. 6d. net.)
- "The Civic Engineer's 'Who's Who,' compiled by the Editor of 'The Surveyor and Municipal and County Engineer.'" First (1912) annual issue. (London: The St. Bride's Press, Ltd. 2s. 6d. net.)
- "Preliminary Studies in Bridge Design." By Reginald Ryves, Assoc.M.Inst.C.E., &c. (London: The St. Bride's Press, Ltd. 2s. net.)

MR. JOHN THOMAS BRESSEY, F.R.I.B.A., of Messrs. J. T. Bressey & Son, Bishopsgate, E.C., passed away recently in his sixty-ninth year. Mr. Bressey, who was a member of the Coopers' Company, practised as an architect and surveyor for nearly half a century, and for forty-five years was consecutively surveyor and consulting surveyor to the Wanstead Local Board and its successor, the Wanstead Urban District Council.

The Architect.

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FORTHCOMING EVENTS.

- Saturday, September 14.*
Northern Architectural Association: Visit to Sunderland.
- Wednesday, September 18.*
Sanitary Association of Scotland: Annual Meeting at Montrose (four days).
- Saturday, September 21.*
Architectural Association Camera Sketch and Debate Club: Week-end at Malden, Essex.
- Wednesday, September 25.*
Institute of Metals: Autumn Meeting at the Institution of Electrical Engineers, Victoria Embankment, W.C. (two days).
- Saturday, September 28.*
Northern Architectural Association: Students' Sketching Club.

INTERCEPTING TRAPS.

Do we really know anything at all about sanitation? If there has been one axiom which has been regarded above all others as the primary foundation principle of drainage, it has been that the drains must be disconnected from the sewer by an intercepting trap, but now we are told in the report of the Departmental Committee appointed by the President of the Local Government Board to inquire and report with regard to the use of intercepting traps in house drains, that the intercepting trap on the whole is not necessary, save in exceptional cases to prevent nuisance from the smell of sewers.

It will be within the knowledge of many of our readers that efforts have been made by various Local Authorities to introduce a system of ventilating the sewers through the house drains connected to them. The Departmental Committee whose report has just been issued was appointed to carry out an investigation which originated with a proposal by the Willesden Urban District Council to adopt a series of building by-laws in which the requirements as to the provision of an intercepting trap were to be omitted.

The case for the use of the intercepting trap has rested upon the presumption that the trap would prevent an entry of sewer gas into the house drain and that it was desirable to prevent this entry. The Committee's report apparently establishes that sewage air is not on the whole detrimental to health, and therefore on this account the intercepting trap is not necessary, neither can it be established that the intercepting trap is necessary to prevent the pressure of sewer air forcing the traps on even an unventilated house drain, still less if the house drain is furnished with a proper ventilating shaft.

On the other hand the intercepting trap has disadvantages which are substantial and of serious practical importance, and as the most important of the effects of these disadvantages are hidden from view, they may remain in existence quite unknown to the householder.

One disadvantage of an intercepting trap is the usually assumed necessity for a fresh air inlet which is prone to become a foul air outlet. The Committee state that the only ventilation which appears to be required on a house drain apart from the anti-siphonage pipes is that which should be provided by the opening at the top of each soil pipe.

Another disadvantage of the intercepting trap is its tendency to retain a considerable proportion of the solid matter of the sewage passing through it at any given time, and thus to favour blocking of the trap as well as putrefaction of the sewage before it reaches the sewer, but this tendency, says the report, may be diminished to a great extent by using a trap of smaller diameter than is customary at present. The strongest indictment against an intercepting trap which is made by the Committee's report is that the liability of the trap to become blocked appears to be insuperable and it is this liability which

constitutes its most serious disadvantage. The accumulation of sewage in the drain produces a block from which many undesirable consequences may follow not readily evident with ordinary drains and, therefore, which may long remain undiscovered.

This block of the trap and accumulation of sewage appears to be very common, evidence of it having been found in more than 23 per cent. of 5,600 traps which were specially examined.

The conclusion therefore is that while the intercepting trap has serious disadvantages the work which it is supposed to do is not necessary to be done. On the other hand the importance of the effect which the presence of the intercepting trap has on the ventilation of sewers, on which much stress has been laid, has probably been exaggerated. The free ventilation of sewers appears to be unnecessary either for the prevention of pressure of sewer air on traps or the safety of sewer men, except in the cases of sewers which are large enough to admit them. Even in such sewers, however, it is dangerous to rely on ventilation alone, and special precautions should always be taken. Moreover it is exceedingly difficult to ensure that sewers are freely ventilated, even when the most elaborate measures for this purpose are adopted.

This difficulty of the ventilation of sewers accounts for the liability of unpleasant smells being carried by sewer air, and this seems to be the only reason in the Committee's opinion for the occasional and exceptional use of intercepting traps. The Committee's report also disposes of the assumed value of the intercepting trap as a barrier against the passage of rats from the sewer into the house drain. It was shown by the evidence that rats had been known to pass through an intercepting trap from drain to sewer and conversely from sewer to drain.

Although the Committee are satisfied on both general and epidemiological evidence that sewer air is not detrimental to health they do not extend the same qualification to drain air, but in this respect we are unable to agree with the conclusion that appears to have been drawn by the Committee from the evidence contained in the report. The Committee say that the bacteriological evidence suggests that if exposure to drain air is related, as many suppose it is, to attacks of sore throats or other septic affections, the explanation may be found in the liability of drain air, unlike sewer air, to carry in suspension large numbers of microbes of sewage origin.

We do not agree that the liability of drain air of which the Committee here speak is proved by the evidence from which they have apparently drawn their conclusion.

It is true that bacteria were found in drains, but these bacteria only occurred when splashing took place in the sewage.

A quotation from the report will we think enable our readers to follow our objection to the conclusion drawn by the Committee from the evidence before them. The report says:

"It is also established by Dr. Andrewes' experiments that the presence of sewage bacteria in drain air, as the result of splashing, lasts only a very short time, and that they subside with great rapidity. The appearance of sewage bacteria after splashing is doubtless effected, not by the ejection or active disengagement from the sewage of the bacteria themselves, but by the detachment from the splashing or disturbed sewage of more or less minute drops of sewage. If the passage of sewage or water through an intercepting trap be watched, as, for instance, in an open experimental installation like that used in the Islington experiments, it will be observed that droplets are frequently thrown off from the liquid, sometimes to an astonishing distance. Besides these comparatively large visible droplets there must be many so minute as to be invisible, and it is from such minute droplets that Dr. Andrewes concluded that the plates used in his drain air experiments were mainly infected. It is possible that the enclosure of microbes in droplets helps to explain their extremely rapid subsidence, which was such a striking feature of his experiments."

We think that this quotation disposes of the view that sewage bacteria are frequently present in drain air although such bacteria are usually absent from sewage air. There can be no doubt in our opinion that the test plates exposed by the experimenters received infection from liquid and not from air.

In the experiments by Dr. Andrewes the time of exposure of some of his plates was only $2\frac{1}{2}$ minutes. On the first plate exposed during the flushing of a closet thirty-eight colonies of microbes were found. On the following three plates, one colony, two colonies and one colony respectively were found, and we agree with the Committee that these experiments bring out very clearly that splashing is the cause of the presence in large numbers of sewage microbes in drain air, and that the effect of this splashing is instantaneous and extremely evanescent in its duration.

We cannot see how any other conclusion can be drawn than that sewage microbes are only present in drain air as long as minute droplets remain suspended in that air, nor can we see that there is ever likely to be in the ventilation of house drains a current of air of sufficient velocity to carry even the minutest droplets into a house.

To reduce the danger from splashing the Committee suggest that in inspection chambers the usual open channels should be closed with a removeable cover. They also strongly recommend the use of iron pipes for drains, both as a means of reducing the liability of intercepting traps to blockage and as a safeguard against the tendency, now becoming well recognised, of stoneware pipes with their numerous brittle joints to become leaky within a very short time of their being properly constructed and found to be sound under the water test.

NOTES AND COMMENTS.

THE British Standard Specification for structural steel for bridges, &c., and general building construction has been revised by the Engineering Standards Committee, the revision dating from last month. It is of importance to architects who have to deal with building in London from the fact that the London County Council General Powers Act (1909) requires that all rolled steel used in the construction of skeleton framework for building shall comply with the requirements of this specification. The original Standard Specification for steel was issued in 1906, and naturally various points have arisen in connection with its use and have been brought before the notice of the Engineering Standards Committee. Hence the revision. Amongst the more important items of this is the classification of the material into two categories—A Steel and B Steel. A Steel must be made by the open hearth process, and must not show on analysis more than 0.06 per cent. of sulphur or phosphorus; B Steel may be made either by the open hearth process or by the Bessemer process and may contain as much as 0.08 per

cent. of phosphorus, and 0.06 per cent. of sulphur. B Steel is not intended for bridges nor for plates $\frac{1}{4}$ in. in thickness and over, and rivet bars. That is, it may be used for building but not for higher grade engineering structures.

The upper limit of tensile strength for plates, sections and bars, other than rivet bars, is raised by one ton, so that the steel now stands as between the limits of 28 and 33 tons per square inch of section. This means of course that higher carbon steel can be used for building. The lower limit of tensile strength for rivet bars is reduced by one ton, and now stands as between the limits of 25 and 30 tons per square inch of section.

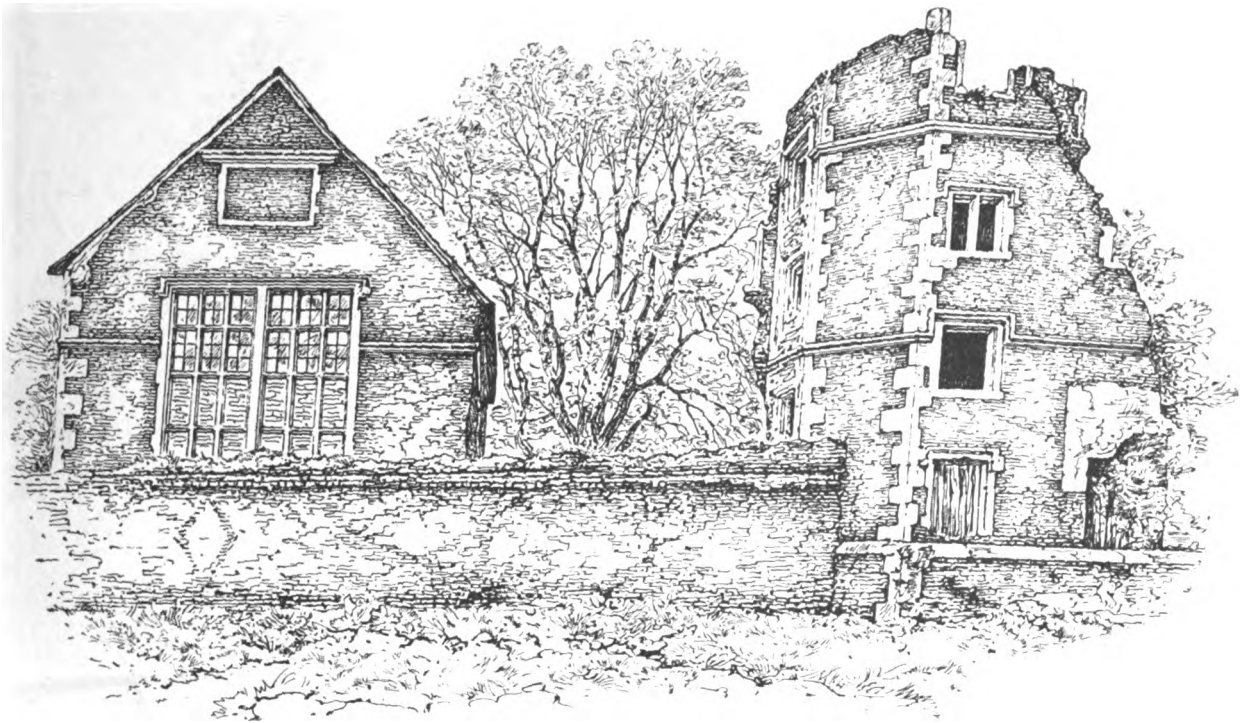
The preface of the revised edition states that amongst the more important modifications of the Specification is the insertion of a clause dealing with tests by an independent expert, but we do not think that the independence or the expertness of the person called in the Specification the "Inspector" is fully guaranteed. In the revised edition it is provided that tensile test pieces may be specially selected by the Purchaser, or by the Engineer or by the Inspector, and the footnote explains that the Inspector shall include any person acting under the direction of such Engineer or Architect. It seems to us that whilst the Inspector might be an independent expert he need not necessarily be so. Other important clauses provide for the possibility of rejection after delivery and arbitration in case of dispute. Although these are the most important provisions the Specification generally has been re-cast and amplified.

The Engineering Standards Committee have now issued British Standard Specifications for cast-iron sprocket and socket Soil Pipes, and cast-iron sprocket and socket Waste and Ventilating Pipes for other than soil purposes. These specify the quality of the material and workmanship, the weights and forms of bends and access doors, and of branches and other fittings. It is also specified that every pipe shall be tested for soundness, by being struck all over with a light hand hammer, and that all the parts of the interior of pipes and fittings shall be galvanised or be coated with Dr. Angus Smith's or other approved composition as may be specified. We should have been glad if the Committee could have specified a really dependable and durable preservative coating or process for the interior surfaces of cast-iron pipes. Numerous diagrams are given with full detailed particulars of sizes of parts, radius of angles, &c., so that it will now be easy for engineers, architects and everyone concerned to ensure uniformity by adherence to the British Standard. In one particular the Committee have departed from the regulations of the London County Council drainage by-laws for pipes of 5 and 6 in. internal diameter, by reducing the caulking space from $\frac{3}{8}$ in. to $\frac{1}{8}$ in., which they consider preferable.

The most interesting articles in the *Connoisseur* for this month are, to our mind, one on the Taylor Collection, in which many phases of artistic craft are illustrated, and a further instalment of the series on "The City of Liverpool and its Plate." Of less general interest are articles on Plumbagos, Japanese Pottery, Ancient and Modern Embroidered Pictures, and some Relics of the Spanish Armada.

In the *Antiquary* the series of articles on "The Ornament called Honeysuckle" is concluded, with illustrations from examples in the British Museum. The inexhaustible topic of "Some Curious Carvings found in some old Churches" is the subject of a further chapter by George Bailey, illustrated with sketches from carved misereres.

It may now we fancy be taken for granted that the battle over the podium of St. George's Hall has been brought to an end, the City Council of Liverpool having decided to enter into a contract for carrying out the altera-



BRADGATE CASTLE.—THE CHAPEL.

tions proposed by Sir Goscombe John, R.A., Mr. Norman Shaw, R.A., and Mr. John Belcher, R.A. Those who opposed the alteration of the podium have apparently made their last effort in endeavouring to prevent the acceptance of the tender for carrying out the work proposed by the three eminent Royal Academicians.

The Circular of the Local Government Board to Rural District Councils, to which we referred in our leader last week, has not been so long in meeting with a desirable response. The Farnham Rural District Council at their meeting last week have not only decided to amend their by-laws and approved plans permitting of the erection of cheaper cottages, but they propose themselves to erect model cottages in their district in order to show the economy which builders would be enabled to effect by reason of the amended by-laws.

The Garden Cities and Town Planning Association desire us to call attention to the fact that they are prepared to send lecturers to any part of the country to deal with the great and increasingly important question of Garden Cities and Town Planning. Lecturers competent to deal with all aspects of the cause have been secured and dates may be booked up.

The report of the Chief Sanitary Inspector of Glasgow on the operations of the Sanitary Department for the year ended December 31, 1911, is not pleasant reading:—"Taking the standard of fifty people upon each acre as permitting of a really healthful existence—the standard adopted by several town-planning experts—we find," he says, "that only in nine wards out of the twenty-six does this condition obtain. These wards are, in the order of precedence, as follows:—Pollokshields, Exchange, Kelvinside, Springburn, Cowlands, Maryhill, Blythswood, Langside, and Dennistoun. In the other seventeen wards, beginning with Anderston, containing 62.58 per acre, up to Cowcaddens, with 214.5 on each acre, we have an overfull city—a city standing much in need of a well-thought-out and orderly process of expansion of the population over virgin soil. So long as we have such wards as Hutchesontown, with forty dwelling-houses upon each acre, and Cowcaddens, with forty-five upon an area which should only contain about as many persons, we must look forward to high death-rates and an abnormal amount of preventable disease."

BRICK-BUILT CASTLES OF LEICESTERSHIRE.

BRADGATE CASTLE, though in ruins and not of any great archaeological interest, owing to the decay of its monuments, is, nevertheless, an interesting specimen of brick building. The fact of it being the one time abode of Lady Jane Grey enhances the interest to such an extent, that many archaeologists and artists pay it a visit. It is unnecessary to give more than a brief account of its history, and a description of the constructional features, as there is a wealth of material at hand more interesting to the student of architecture.

Lady Jane Grey was bred and studied within the walls of Bradgate Castle, which fact proved it to be a residence of beauty, for Lady Jane Grey was a lover of nature and beautiful works.

Bradgate lies low, is seated in a valley, and stands upon the borders of Charnwood Forest. The building itself was a square with four turrets, one at each corner. The vaults or cellars are overgrown with nettles and alder, the garden walls are, in part, remaining; as is the terrace. The pleasure or courtyard with gardens are still traceable, although now they have somewhat the appearance of a wilderness. The chapel, which also stands near the ruins, is in the best condition, care having been taken of the roof and window, but till a few years back it was in a shameful disorder. The heads, legs, and arms of many important stone monuments of the Grey family formerly lay blended with the dung of horses and cows, but they are now shut up from the eye of the visitor in the old chapel.

Many of the brick castles of Leicestershire have been destroyed by fire. This fact would appear curious, as so little inflammable material is to be seen in their construction. Very little woodwork is visible: brick, stone, and lead being the principal materials. Bradgate Castle shared the fate of its companion at Kirby, about five miles distant, but, in this case, it was set alight by a woman. According to Throsby, it is said of the wife of the Earl of Suffolk, who last inhabited Bradgate Castle, that she set it on fire at the instigation of her sister, who then lived in London. The story is thus told: "Some time after the Earl had married he brought his lady to his seat at Bradgate. Her sister wrote to her, desiring to know how she liked her habitation, and the country she was in. The Countess of Suffolk wrote for answer: 'That the house was tolerable, that the country was a forest, and the inhabitants all brutes.' The sister in consequence by letter desired her to set fire to the castle, and run away by the light of it. The former part of the request, it is said, she immediately put into practice, and thus this celebrated and interesting place was consigned to the flames."

The floor of the castle was of plain brick, laid in rough mortar; nearly everything which could be constructed in



BRADGATE CASTLE.

brickwork was done so, with the exception of a few stone quoins and window heads. Arches were turned over openings in pressed bricks, with moulded faces, and iron gates were used instead of wood doors, wherever possible, even to the connection of the bedrooms, where presumably curtains were adopted.

It is interesting to note the number of ornamental iron ties, which were used for strengthening purposes there. The builders were not content with constructing a wall of solid brickwork five to six feet thick, but they must needs introduce iron ties and bolts, an inch in thickness to prevent settlement or swelling. The foundations were carried down to the rock, and the arch for transmitting weight to certain portions was much used.

There are windows and loopholes everywhere, so that the occupants could command a view of the surrounding district, and keep a good watch for marauders.

The bricks are longer and thinner in shape than the present standard size, and appear to have been hand-made; they are very coarse, with stones and flint showing. The mortar joints are in some cases quite an inch thick, and, as in the case of Kirby Castle (described in a previous article), the mortar is far stronger than the brickwork.

Nailing was never resorted to in this type of building; the builders preferred to bore holes through beams, and peg the joists to it. Plaster was utilised to cover the walls; two-coat work was employed, an inch in thickness for each coat; this was strengthened with reeds from the brook, but the builders were not particular whether small sticks or the stems of ferns were used to increase bulk and strength.

Bradgate Castle though crude was a triumph of brick building at that time, considering the many difficulties which beset the builders.

Ashby (styled de la Zouche, from its having formerly belonged to a family of that name) is situated in the hundred of West Goscotes. After the extinction of the male line of the Zouches in the reign of Henry IV., the manor came to Sir Hugh Burnell, knight of the garter, by marriage with Joice, the heiress of that family. From him it devolved to James Butler, Earl of Ormond and Wiltshire, who was attainted on account of his adherence to the party of Henry VI. In the first year of Edward IV. it was granted by that king to Sir William Hastings, who in consideration of his services was created a Baron, Chamberlain of the household, Captain of Calais, and Knight of the Garter, and received licence to make a park and crenellate, or fortify, several of his houses.

Ashby Castle was constructed of materials plundered from other castles. Lord Hastings procured the lead from off Belvoir Castle, which had been committed to his care. Stoke d'Albange was also despoiled of its more expensive materials and ornaments for building Ashby, by this robber lord.

The Council Board, it is said, seized Lord Hastings, and two hours after he was beheaded in the Tower by the order of Richard, III.

Throsby's book on Leicestershire informs us that in November, 1485, the attainder was removed from the Hastings family by Henry VII., after the battle of Bosworth Field, and all their estates were restored. Ashby Castle since then has regularly descended to the Earls of Huntingdon, many of whom are buried in the parochial church.

The castle, with its courtyards and grounds, is so extensive as to make a general description impossible.

The south courtyard, which is in the form of a rectangle bounded on every side by ruins, shows an extensive and beautiful view, the old chapel on the left, with a massive but well proportioned tower opposite, and a long range of buildings leading from it, linking the whole together, and forming a perfect courtyard.

The tower claims attention first; it is in excellent preservation, with monumental sculpture and ogee crocketed niches pierced in the wall facing the courtyard. These niches contain heraldic designs carved in stone of a very fine texture. Their height makes it quite impossible to procure any photographs, as they can only be seen through a pair of field glasses. It appears curious that such fine carving should be executed twenty feet up a wall, with no apparent means of access to it.

After passing under the semi-circular arch, through the tower, the visitor is confronted by a door, which leads up a tortuous flight of ninety-nine steps into a room about ten feet square, with an oriel window to light it. This was the room in which the unfortunate Lady Jane Grey was imprisoned for a time. The outlook from this somewhat bare prison is very beautiful, commanding a wide view of the north and south courtyards with their surrounding buildings.

There were other rooms in the tower, but the ceilings and roof have fallen away. Very little wood was used there, the first floor in most cases was supported by arched ribs and columns built into the walls. The decoration must have been very fine; the interior of the tower still exhibits remains of ornaments which are of eastern design. The walls were built of brick and stone, usually a brick core faced with limestone. The fireplace in the room next to Lady Jane Grey's prison is worthy of note; it is covered with carving, depicting war scenes, also trophies of the chase, intermixed with martial designs.

On descending to the ground a small flight of steps leading down to a square doorway below the floor level gives access to one of the dungeons, so much used in the fourteenth century. The hole—for it was nothing more—is five feet square, and about six feet high, containing a stone seat. When the low door was closed, which presumably was fitted with a barred wicket, the place must have been practically devoid of light or air. The guard rooms were so placed as to make escape from the dungeon impossible.

The rooms or halls for the men-at-arms were lofty and wide, with an underground passage leading to the assembly rooms.

The kitchen quarters of the castle are opposite to the tower just described. This is one of the most interesting

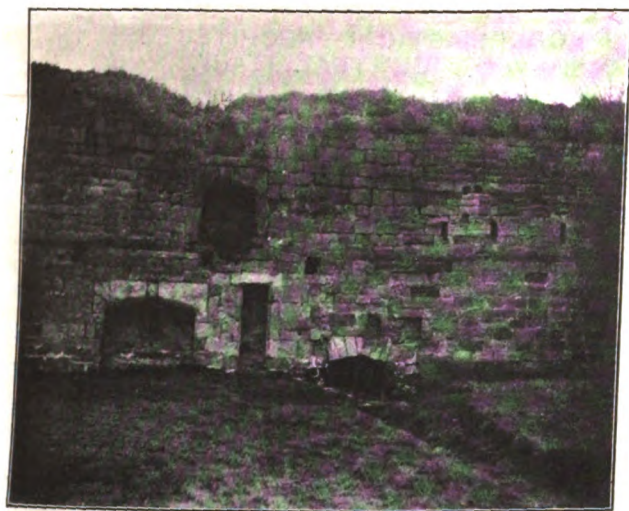


ASHBY CASTLE.—FROM THE SOUTH.

parts of the ruins. The kitchen is approached by descending a few steps and passing under a semi-circular arch, the idea being to keep the doorway out of sight, just in the same way as the present architect endeavours to plan his kitchens at the back of the house.

The photograph shows a very wide fireplace in this kitchen with a small apartment in the centre. This apartment, containing a stone seat, was designed for the scullion,

of the kitchen, with a pantry and a niche on the left. The niche was built for the purpose of supporting the tackle for lowering a bucket into a well below. The thirteenth century builders were always careful to have water close at hand and food also, as in those troublous times they were ever expecting to be surrounded and supplies cut off by their opponents. This well is thirty feet deep circular in shape. The opening on the right of the pantry was used as a private



ASHBY CASTLE.—VIEW SHOWING DOORWAY TO SECRET CHAMBER ON THE RIGHT.

usually a small boy, who sat and turned the spits for both flues, one each side of the seat. The heat must have been very great, and a small aperture was pierced between the two flues for some of it to escape. Spits in other buildings of this type were turned by dogs, which were leashed to it and forced by the scullion or cook to trot round in a circle, so turning the joint. Two large ovens are to be seen, one on each side of the flues; they are mere holes hollowed out of the stonework, and were used chiefly for baking bread. It is said that a whole ox has been roasted in this fireplace. This is quite probable, as the width of the opening is fourteen feet. The small photograph shows the opposite side

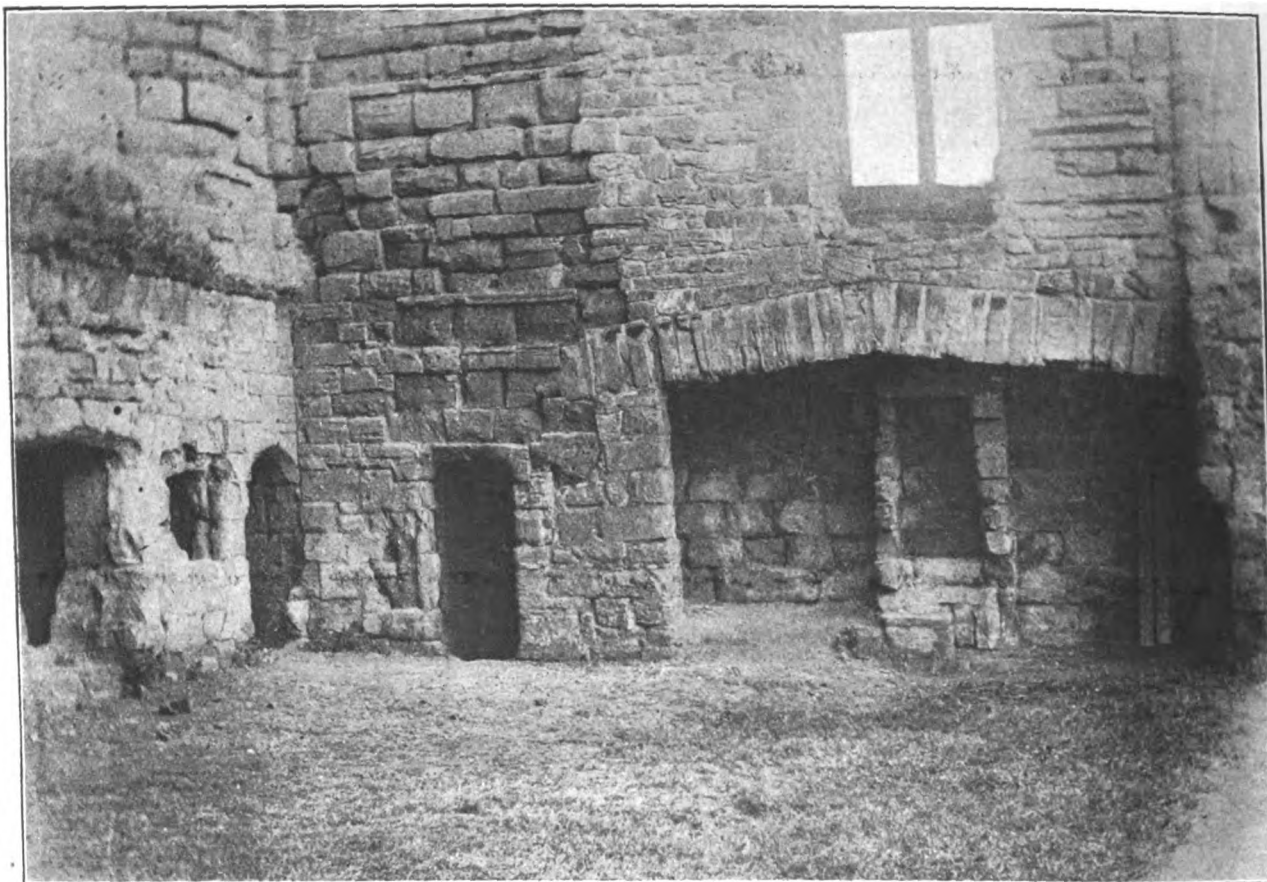


ASHBY CASTLE.—PANTRY AND DOORWAY IN WALL ABOVE

door to the kitchen, for the use of the mistress, who no doubt supervised the culinary work.

Over the niche the reader will notice an opening in the wall. This was used by the servants to carry the food through the wall, which is eight feet thick, into the banquetting chamber.

The castle boasted of several means of escape by underground passages and secret chambers. The entrance to one of the best, and in good preservation, is depicted in the photograph, on the left hand side of the great fireplace. This passage is constructed entirely of brickwork with an arched roof. The width is three feet by seven feet to the soffit of



ASHBY CASTLE.—THE KITCHEN AND ENTRANCE TO UNDERGROUND PASSAGE.

the arch. About fifty yards down is another branch of the passage to the left. This branch is now bricked up, but at one time it led to a farmhouse four hundred and seventy yards away from the castle walls, and was used as refuge and a store for provisions in case of siege. The main passage is roughly a hundred yards long, and ends abruptly in the south courtyard, with another flight of steps to the ground level.

Next to the kitchen after passing a buttery, well stocked with shelves and admirably lighted, is the banquetting hall, with a minstrels' gallery. This room was probably the most magnificent; the remains are still very fine. Many hooks are visible on the walls, which at one time supported tapestries. Panelling was fixed there to hide the stone and brickwork. In this hall dinner was served up by thirty-four knights in velvet gowns and gold chains, when King James I. visited Ashby in 1617. Everything was sumptuously magnificent which crippled the resources of the Earl. Lady Flora, daughter of the first Marquis of Hastings, concludes a poem on Ashby Castle, describing this visit of the king to her ancestor, Henry, fifth Earl of Huntingdon, as follows:—

"The bells did ring, the gracious King
Enjoyed his visit much;
And we've been poor ere since that hour,
At Ashby-de-la-Zouch."

The chapel is a plain structure, and not very large, its main entrance was approached from the north and south courtyards. The tracery has, of course, crumbled away from the windows, but there are indications of leaded and stained glass having been used.

The north courtyard appears to have been used as a strongly walled pleasure garden, long narrow arches and small quaint doorways; everything in fact was, and is, different from the stiff military Gothic architecture of the south courtyard. A few more small rooms and outhouses are dotted about, but they are not worth mentioning, as their ruinous state makes it impossible to find the nature of their use.

In the month of November, 1648, it was resolved that the garrison and castle of Ashby-de-la-Zouch should be "slighted and made untenable." Thus, says Nicholls, "was this noble structure soon after permitted to dissolve, with the downfall of the monarchy and the king's (Charles I.) interest, these unworthy ends being effected by the Parliamentary Committee then sitting at Leicester, which com-

mittee, having sent some of their members to view the place, employed divers persons to demolish these goodly towers by undermining, William Brinbrigg, commanding a party of horse for the occasion, bearing the oversight thereof." Since then, what was once a castle, massive and strong, is now a famous ruin.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

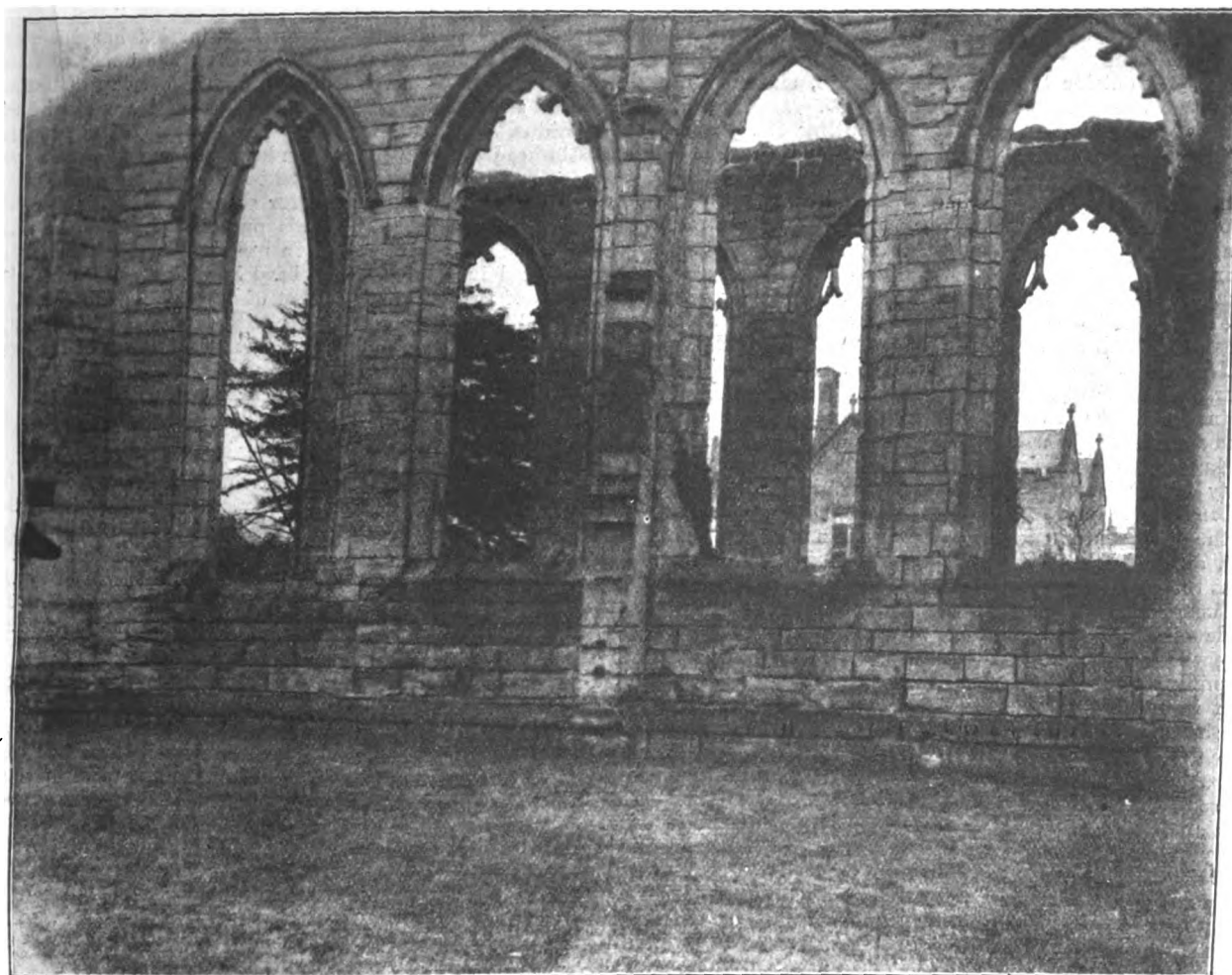
IV.—FACADES.—DOORWAYS.—CAMPANILI.—DOMES.

(Continued from last week.)

THE first view of an Italian church, whether Romanesque or Pointed, is strikingly different from anything we are accustomed to in our own ancient buildings.

Generally speaking, it is a long, broad, rather low building, lighted with but few windows, with a small clerestory, if any, and with but little irregularity in shape or plan. We rarely meet with more than one tower, and this is seldom combined with the rest of the design in the manner common to us in England or France. There is no approach, then, to such combination of steeples as are familiar to us at Lincoln, Wells, Laon, Coutances, or Rouen, to the loss, it must be confessed, of much external grandeur. The steeple, when it does occur, is often detached, and when it is engaged it is placed in some irregular and abnormal position, where it is at once felt that it is purposely not intended to be looked at in conjunction with the main façade of the building. The only relief to the monotonous outline of the main building is at the crossing, where something in the way of a dome is occasionally introduced, as at Pisa and Siena, but this is always of but slight elevation, and not intended to produce any of the effects aimed at in the central towers of the north.

In the façades of Italian churches we have a portion on which, in common with ourselves and the French, the architect often lavished the greatest pains. The treatment is very similar in its idea throughout the whole period during which the style prevailed, and the effect produced is undoubtedly often very striking.



ASHBY CASTLE.—THE CHAPEL.

In none of the minor Italian cities can the architectural genius of the twelfth and thirteenth centuries south of the Alps be more advantageously studied than at Lucca, where almost every church presents the features characteristic of the same local type, borrowed from the Pisan, but more fantastic, redundant, and barocco.

The façades of San Michele, Sta Maria Forisportam, San Giusto, and San Pietro Somaldi may be accepted as typical of the kind prevalent in Tuscany during the epoch above alluded to, and which may be described as having a basement storey enriched with a series of shallow blind arcades with half columns or pilasters supporting round arches of narrow span, the central one being occupied by a square-headed doorway whose lintel, often highly enriched, is surmounted by an arch, though not often enclosing sculpture. Above this basement storey are two to four storeys of detached arcades with slender columns and round arches, the flat surfaces behind being inlaid with coloured marbles, and the capitals and spandrels adorned in strange profusion, with symbolic figures, human and bestial, dragons, griffins, &c.

The church that pre-eminently represents this Lucchese style in its grandeur and peculiarities is San Michele, whose situation in a large market place is most favourable, allowing one to walk round the entire structure.

The first impression made by it partakes of astonishment, so picturesque, rather than architecturally beautiful, so imposing, yet so opposed to recognised rules, are the aspect and details of its façade. Four tiers of arcaded galleries, the two higher considerably narrower than the other two, rise above the ground storey of blind arcades. Over the chief portal are low reliefs on a horizontal panel, griffins, a female centaur, a double-tailed syren, and animals in combat. All the available spaces above those arcades, on capital, cornice, and spandrel, are occupied by similar dream-like creatures in sculptured and inlaid work. On the apex of the gable-summit stands a quaint ponderous marble colossus of St. Michael overcoming the Dragon, with bronze wings and gold-bordered vestments; and at the lower angles are two angels

standing in Gothic canopies, their scale smaller, but both alike specimens of rude mediæval style. Viewed from the north or south-west, this façade of San Michele at Lucca presents a very singular appearance, the two upper tiers of arcades rising clear above the low-pitched roof of the nave, and therefore presenting to the severe critic an effect of falsity and unmeaningness; but it cannot be denied that this front, when seen from the due west, is one of much grandeur, its architecture exemplifying the northern imagination as it dominated in Italy after the Lombardic and Frankish conquests, little modified by the genius proper to the Italian mind. The cathedral has a façade of similar character, in this instance built over a deep porch or *loggia* opening from the spacious piazza in front of it by three noble round arches on piers of the compound type, and as, both in this cathedral and in that of Pisa, there is a well-developed triforium and clerestory to the nave, the façade is commensurate in height with the church, and on that account has a far more pleasing appearance when viewed from a north or south-easterly point.

The façades of the churches of Sta Caterina and San Michele in Borgo at Pisa are among the most exquisitely beautiful examples of the Italian Gothic style. The former was in all probability designed by Nicola Pisano, assisted by his pupil, Fra Guglielmo Agnelli, a native of Pisa, who received the Dominican habit as a lay-brother in 1257. It is especially interesting as showing how admirably the builders adopted the Romanesque fashion of the arcaded front to the style then prevalent. Over three semi-circular blind arches is an elegant range of Pointed arcades, with slender shafts and trefoiled canopies, broken by a circular window, once perhaps filled with tracery, but now quite plain, framed in a square of little half-figures. The whole of the gable is likewise arcaded and richly crocketed, and the tiles which cover its sloping sides have a remarkably pleasing effect.

At San Michele in Borgo the façade follows exactly the outline of that of the cathedral, is arcaded very richly in the Pointed style, and has the plain surfaces of the wall

behind the arcades inlaid with patterns in dark marble. In the churches of San Francesco, Sta Chiara, and San Pietro, at Assisi, and in the two most valuable Romanesque churches just outside the city of Toscanella, sixteen miles from Viterbo, we see another type of façade. These are all remarkable for the simple and truthful outline of their low-pitched gables—at Sta Maria, Toscanella, and San Pietro, Assisi, there is no gable at all—their grand western doors, and their rose windows, sometimes surrounded by sculptured symbols of the Evangelists. These façades are honourably distinguished by being in no sense shams; that of Sta Maria, Toscanella, being perhaps, in some respects, the most remarkable of all. The rose-window and the doorway below it are of the best early First Pointed; and as well as the angles of the wall are adorned with a dog-tooth enrichment, identical in its character with that which we see so frequently in our own thirteenth-century buildings. The circular window in this façade of Sta Maria at Toscanella is one of the most beautiful of the writer's acquaintance, even in France, that land of circular windows. Unfortunately, however, its beauty is lost internally, as the glazing, instead of being fixed in grooves so as to show one-half of the tracery outside and the other inside, entirely covers the window in one large sheet, an unpleasant Italian practice of which this is by no means the only example.

Somewhat analogous to those of Lucca and Pisa is the façade of Sta Maria della Pieve at Arezzo, one of those churches to which the ecclesiologist has some difficulty in assigning an origin, for although it has a Lombard character about it, it lies too far south to permit of its being classed with buildings of that province. The western front of this church is beyond question one of the noblest and most remarkable of its class in Italy, and would appear to have had considerable influence upon the architect of the developed Gothic front of Notre Dame at Dijon, being quadrangular and presenting several tiers of arcades over the entrances. At Dijon, however, one of those deep porches so common in Burgundy is formed under the façade, which is not a mere screen, but constitutes a kind of huge western tower, extending the whole breadth of the church. At Arezzo it is only a screen without relation to the structure behind it, and into which the three noble Romanesque portals open directly. Here we have four storeys. The ground storey is a blind arcade of five arches, three of which are pierced with doorways, admitting to the nave and aisles respectively. In the other three are open galleries carried uninterruptedly along the breadth of the façade. Of these, the first two consist of a series of round arches on slender columns, and the highest a colonnade supporting a horizontal cornice.

No systematic arrangement is evident in these openings, for the second stage of the elevation numbers twelve arcades, the third twenty-five, and the highest thirty, the arcades decreasing in width as they ascend. The slender pillars of these openings assume a variety of shapes, and not only shapes but sizes and materials, plain, fluted, twisted, and knotted. The capitals form a mixture of styles, frankly gathered with but little thought or skill from antique fragments and miscellaneous sources. Such a piece of work as this façade of Sta Maria della Pieve at Arezzo is one which, in the deficiency of authentic records, might be assigned to a period anterior to the thirteenth century, when the neighbouring cities were demonstrating the strength and grace of which the Romanesque of Central Italy was capable.

(To be continued.)

BRONZE AND IRON JAVELINS IN CARIA.

Communicated by Professor W. Ridgeway, F.B.A., to the meeting at Dundee, 1912, of the British Association.

In the "Early Age of Greece," Vol. I., I argued (1) that the culture of the Early Iron Age of Central Europe was that of the Homeric Achæans, who had brought it with them into Thessaly, where they were settled in Homeric times; and (2) that the older race and those who could not obtain the new metal had to content themselves with weapons and implements of bronze; and that (3) there was consequently a distinct period of overlap when bronze and iron weapons were in use side by side. This accounts for the fact that whilst the weapons in the hall of Odysseus are collectively termed *sideros*, yet in descriptions of individual combats the phrase "smote him with the bronze" (*chalkos*) is generally used. As the language of Homer is that of the older race, whose bards sang the praises of the Achæan lords, it is natural that poetic diction used the name of the older metal for weapons long after the new was in use, as indeed is the

case in everyday language, e.g., we speak of "instruction in musketry," though the Brown Bess musket has not been used in the Army for some sixty years. The tombs of East Crete have already given evidence for the overlap of bronze and iron swords. The "find" now described was discovered at Cnidus, in Caria, in 1911. It consists of six bronze javelin-heads, five iron javelin-heads of exactly the same type, a small iron knife, and one or two iron fragments, and a small whetstone perforated for suspension. This association of javelins of both metals puts it beyond doubt that weapons of both metals were in use at the same time, as is represented in Homer. If a bard had been celebrating the exploits of the owner of this set of javelins he would surely have said that he "smote his foe with the bronze" (*chalkos*), even though he had slain his adversary with one of his iron specimens.

COMPETITION NEWS.

RANGOON.—Messrs. Ogilvy, Gillanders & Co., agents, 67 Cornhill, E.C., have been advised by cable from the Rangoon Municipality that the time stated in Clause 14 has been further extended to March 1, 1913. The latest date for posting letters to reach Rangoon by that date will be by the Indian mail closing in London on Friday, February 7, 1913. This information is supplementary to the alteration announced in our issue of August 30.

WALES.—The Welsh Housing Association, as stated in our issue of August 30, arranged a competition scheme in connection with the Royal National Eisteddfod just held at Wrexham. The designs submitted by "Betterment" and "Ivy" were considered by the two assessors to be of equal merit, and the prize of £50 was divided equally. The authors of these designs were Mr. W. Eaton, A.R.I.B.A., Cardiff, and Messrs. Fair & Myer, of London, with Mr. Arvon Jones, of Carnarvon.

BOOKS RECEIVED.

- "Modern Sanitary Engineering. Part I. House Drainage." By Gilbert Thomson, M.A., F.R.S.E., M.Inst.C.E., Lecturer on Sanitary Engineering in the Royal Technical College, Glasgow. (London: Constable & Co., Ltd. 6s. net.)
- "Structural Design. Volume I. Elements of Structural Design." By Horace R. Thayer, Assistant Professor of Structural Design, Carnegie Technical Schools, Pittsburg, Pa. (London: Constable & Co., Ltd. 6s. net.)

ILLUSTRATIONS.

SEDILIA IN ST. MARY'S CHURCH, TEMPLE BALSALL.

TEMPLE BALSALL is so called from the Knights Templars, to whom it was given in the twelfth century by Roger de Mowbray. The church is a fine Early Decorated building, having a large interior consisting of a chancel nave without aisles or columns, with a modern roof and a small modern tower at the S.W. angle. The windows are all varied and have rich Geometrical tracery. There was formerly a porch at the south door, and there are traces of other buildings at the west end. The church was restored in 1849 by Sir G. G. Scott, R.A. The drawing by "Plato," which we reproduce, was awarded a prize in the monthly competitions of The Architect Students' Sketching and Measuring Club.

A POT-POURRI.

This plate may be taken as an exemplar of some of the many varied directions in which the art of architecture is exhibited.

COTTAGES AT WALLSEND.

As indicated on the plate, three of these cottages, designed by Mr. Edward Cratney, were awarded medals at the North of England Cottage Exhibition, and all show how very small houses can be artistically treated. Plans of one of the pairs of cottages now illustrated were given in *The Architect* for November 20, 1908.

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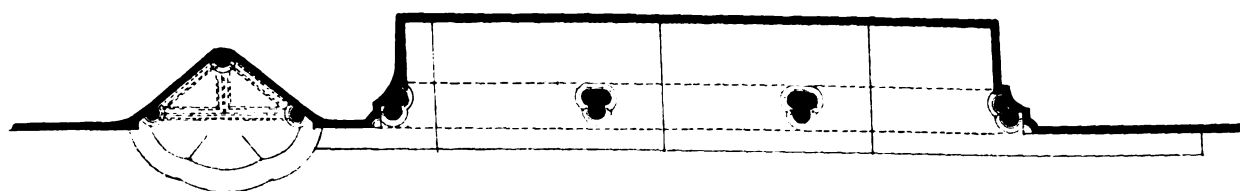
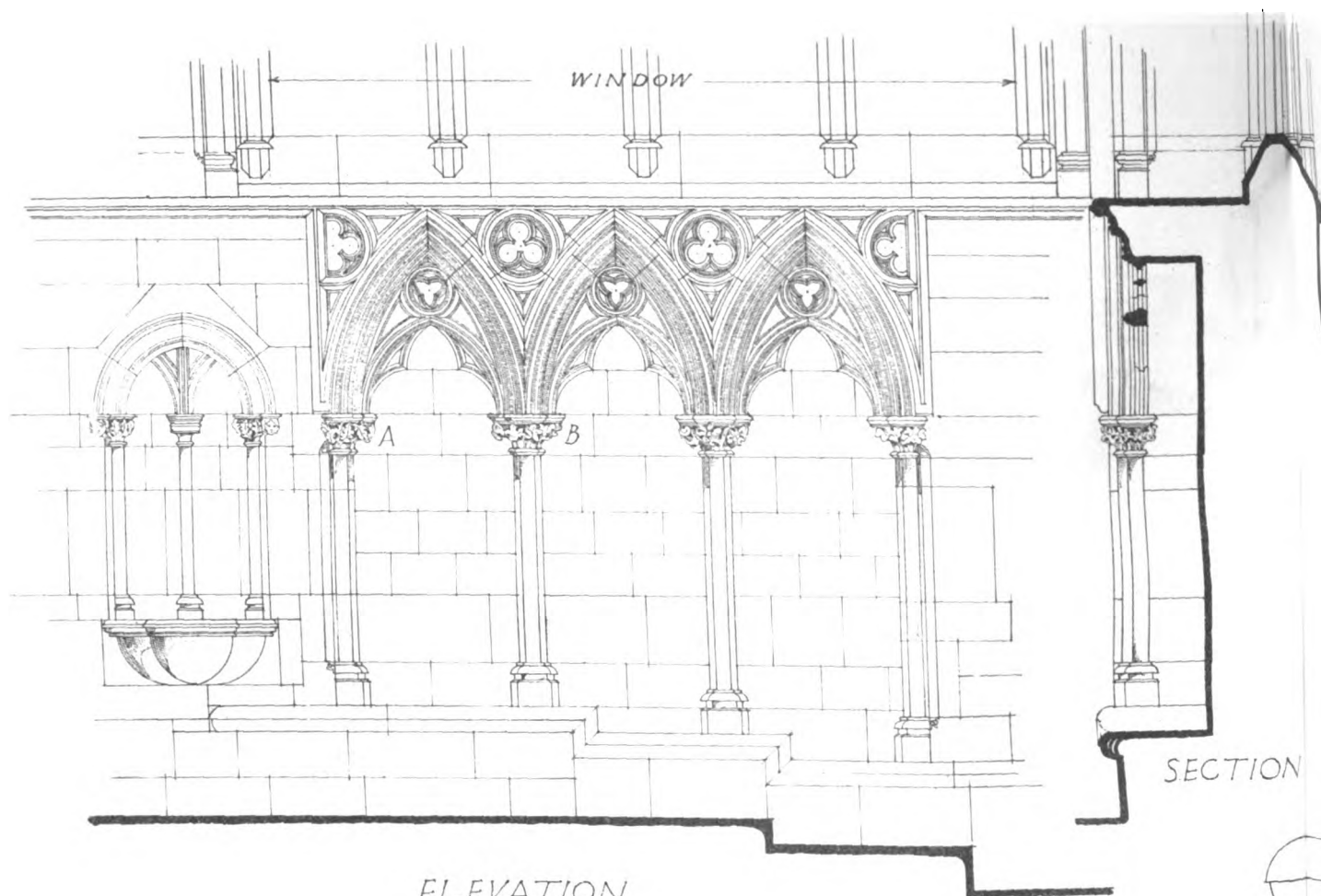
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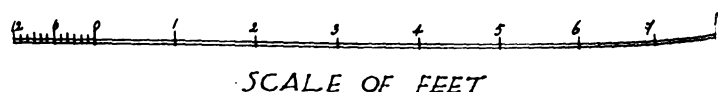
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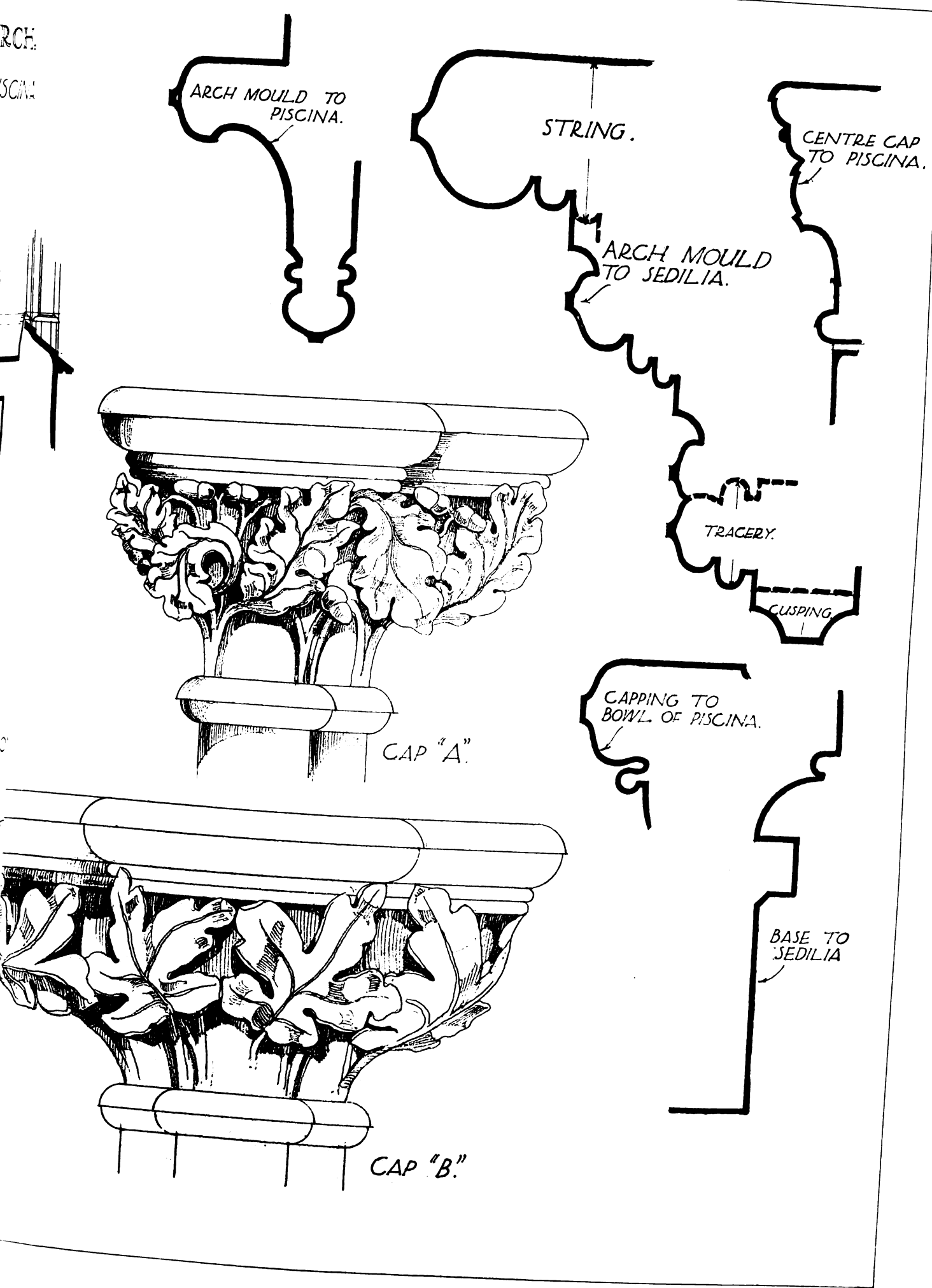


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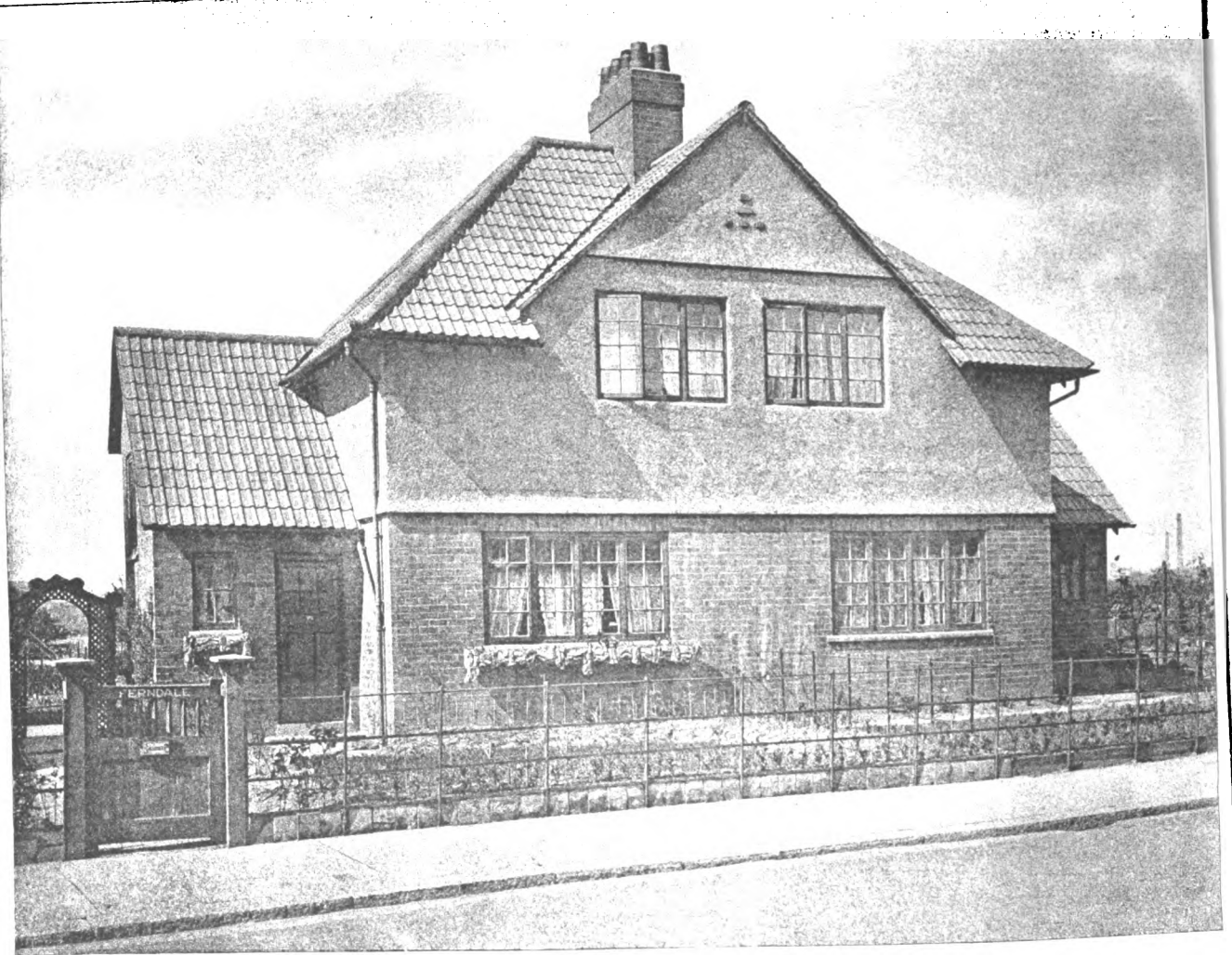
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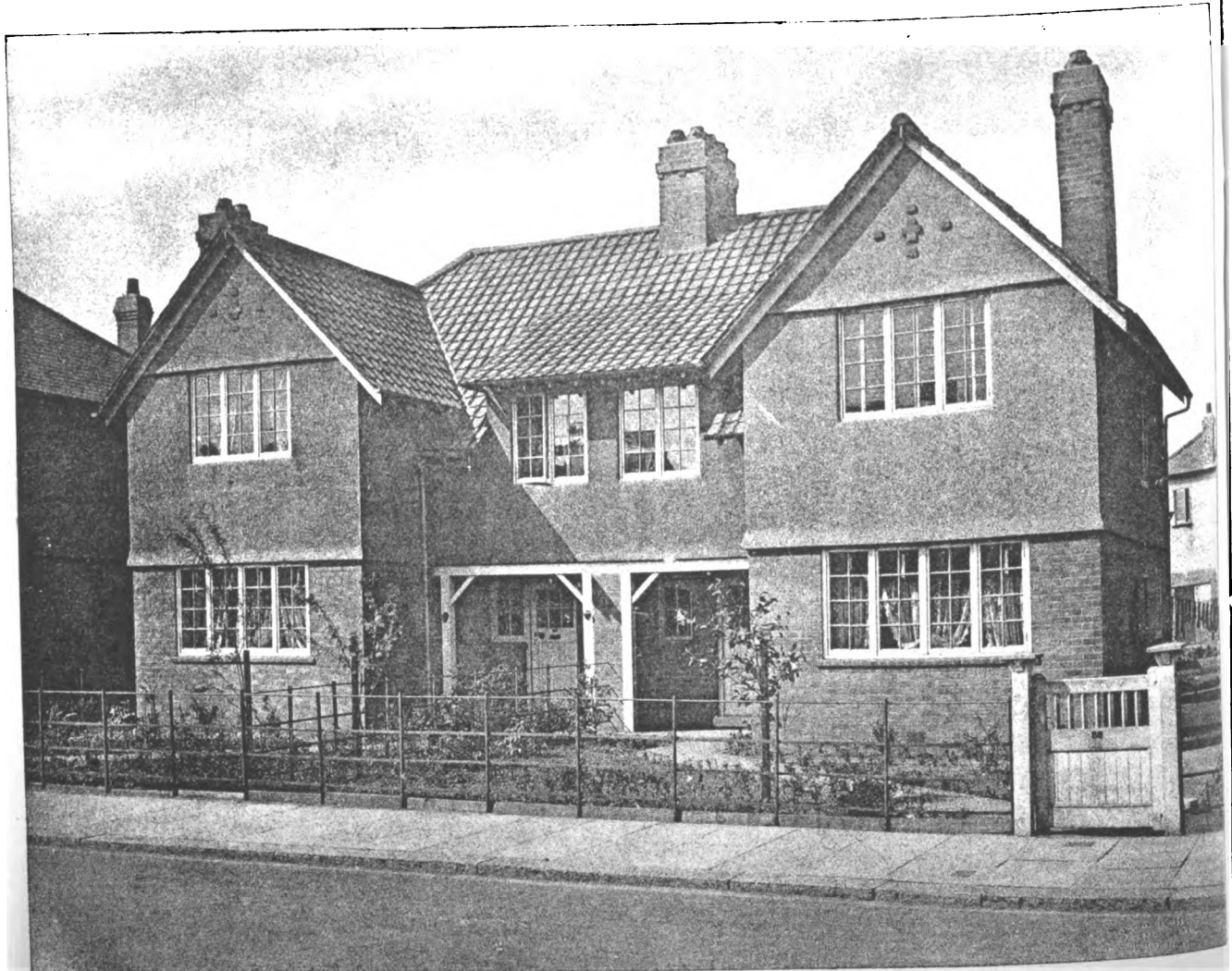








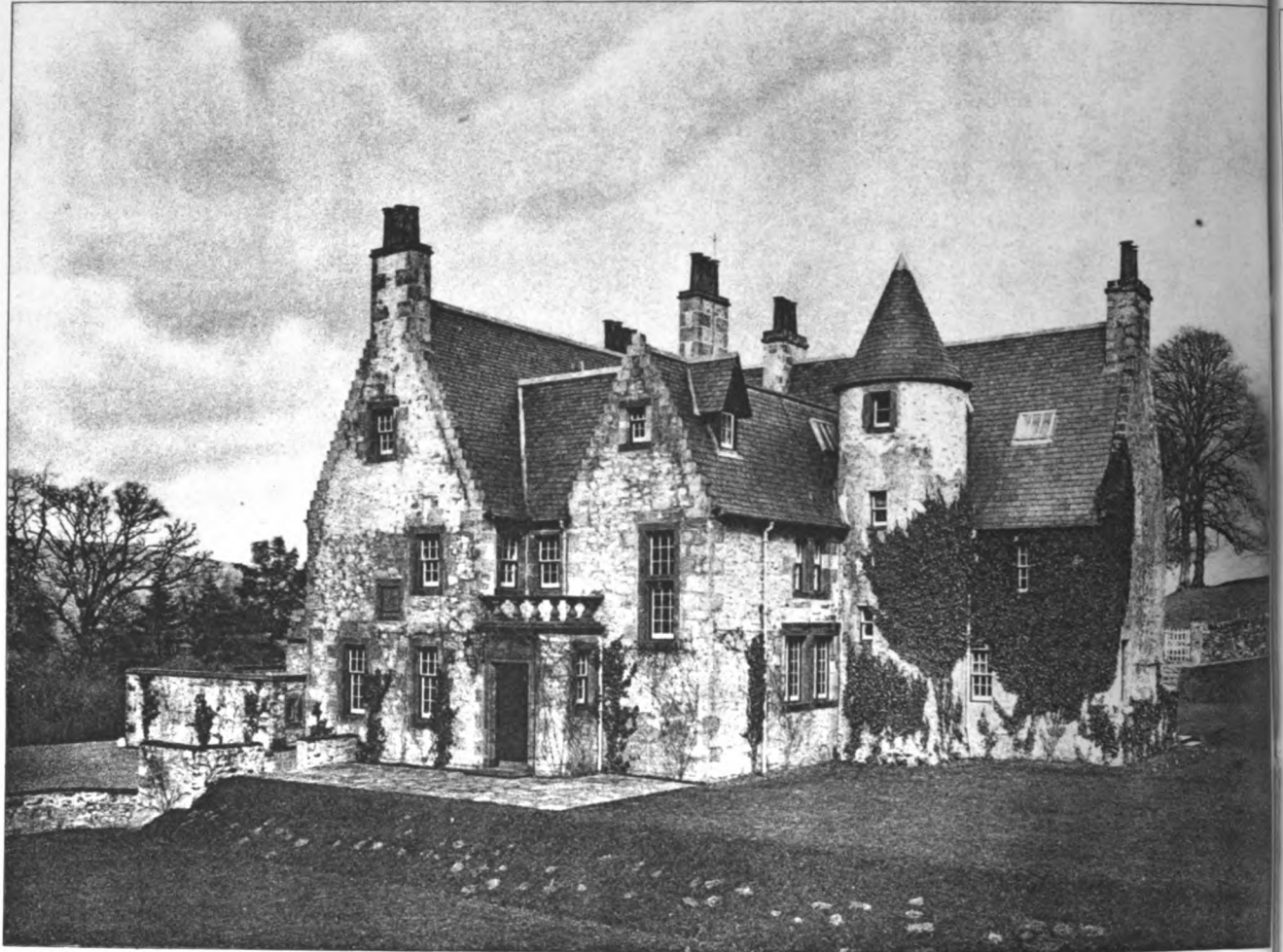
Silver Medal Design. Class A.



Gold Medal Design. Class C.

PHOTOGRAPHS BY THOS. LEWIS STRATFORD ROAD, BIRMINGHAM.





GILKERSCLEUGH HOUSE, LANARKSHIRE.

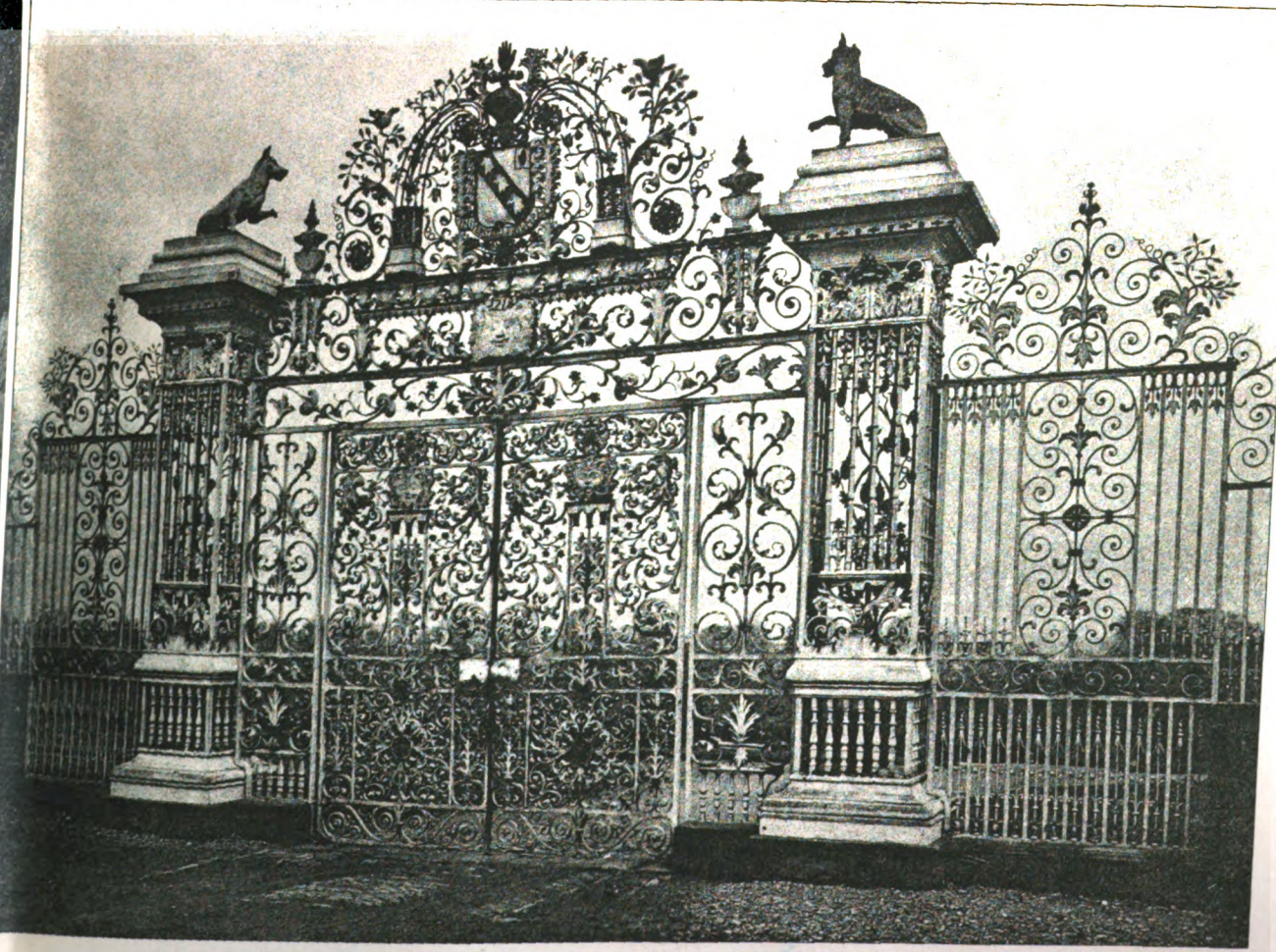


SEVEN SPRINGS, COWLEY MANOR, GLOUCESTERSHIRE.

PHOTOS BY R. L. WARHAM, 90, SINCLAIR ROAD, W.

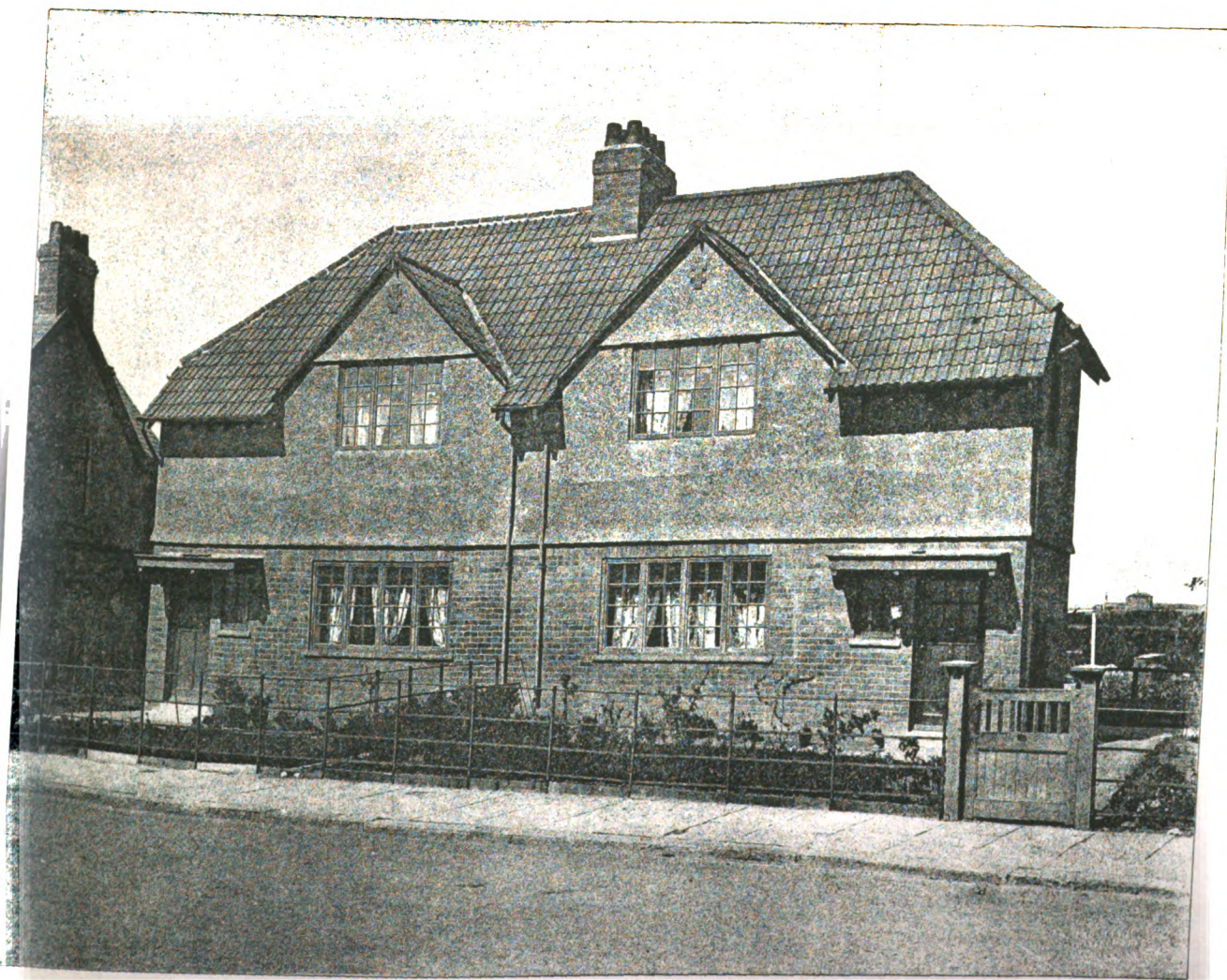
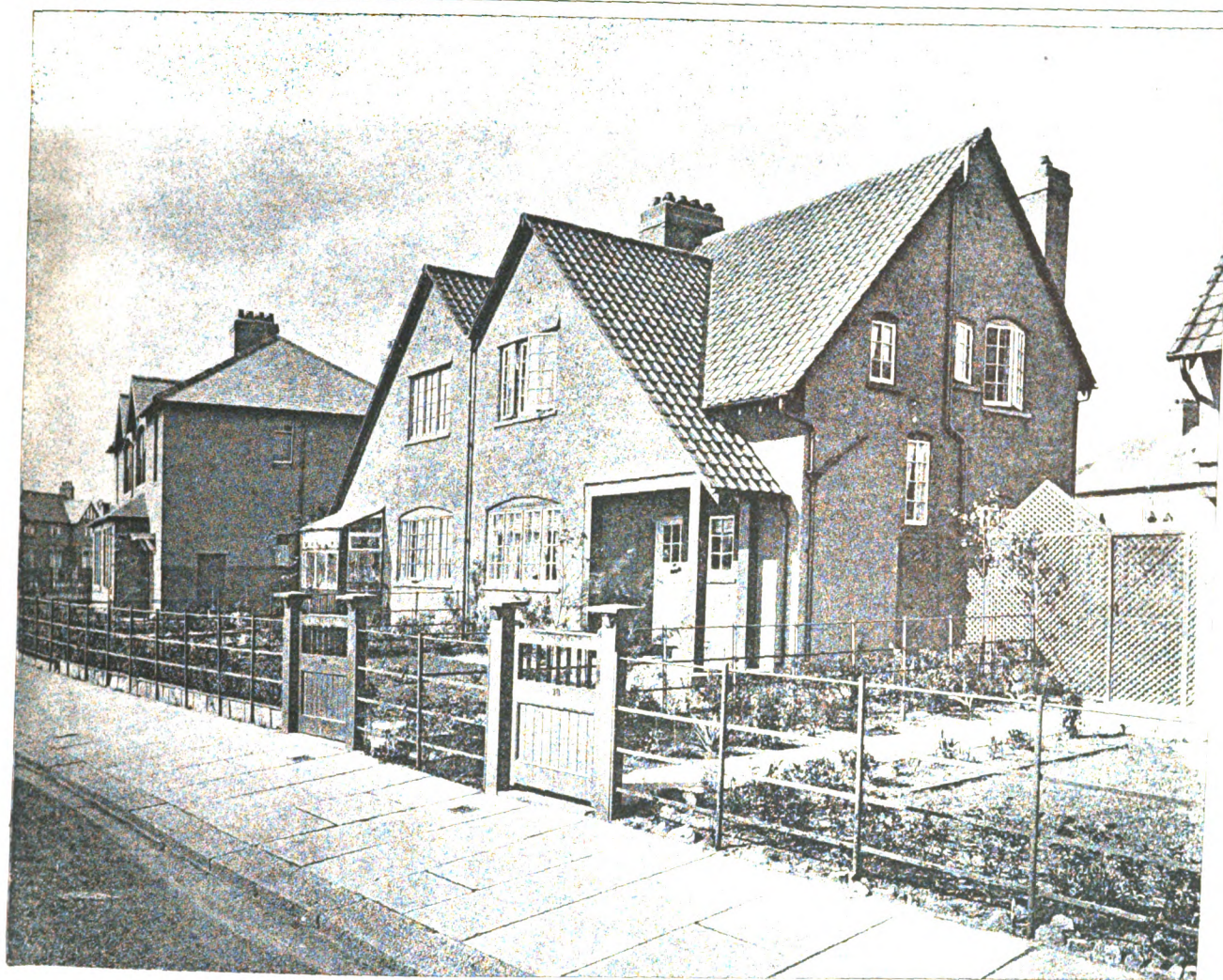


VRONDEG HALL, WREXHAM. Sir ASTON WEBB, C.B., C.V.O., R.A., Architect.



IRON GATES, CHIRK CASTLE.





Silver Medal Design. Class B.



INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—II.

(Continued from last week.)

FORDE ABBEY, Dorsetshire, was a Cistercian monastery of twelfth century origin. Thomas Chard, a sixteenth century abbot, erected much of the existing Gothic work in 1528, and subsequently surrendered it upon the dissolution of the monasteries. It changed hands several times before becoming the property of Attorney-General Prideaux, whose second son, Edmund, caused the alterations designed by Inigo Jones to be carried out in 1650, of which the grand staircase, the dining-room, the saloon, the small drawing-room, and the oak bedroom form the principal additions, together with the chapel screen and other woodwork there.

Simon Gibbons is cited as having executed the wood-carving here. He was largely employed by Inigo Jones on his later work, and was skilled at carving the open or pierced balustrading and panel work typical of the period, of which there exists an excellent example in the ante-room of the Great Chamber at Hampton Court, which was formerly the chapel screen.

The chimney-pieces and ceilings (of which latter there is an immense area) at Forde Abbey do not exhibit the high standard of quality that is expressed in the wood-carving. The plasterer has taken more license than was usual in the time of Inigo Jones' vigour, and has returned to Jacobean vulgarities in some of the figure work. The main lines are obviously those of Jones, but the detail lacks his supervision.

The saloon is a very large and handsome room, the main beams of the ceiling curving down at their ends on to the cornice. The mural decorations consist of fielded panelling with carved mouldings. Large silk tapestries adorn the walls, having Scriptural subjects taken from the cartoons of Raphael. The chimney-piece is a typical one, the overmantel having a large central panel containing a painting of children at play flanked by carved pilasters, crowned by a broken curved pedimented cornice, which is crested by a large central cartouche with two smaller ones at the sides. Beneath the picture is a boldly carved frieze containing the familiar festooned mantling to a female head. The marble chimney-piece below is probably a later addition.

Amesbury House, Wiltshire, and Tyttenhanger in Hertfordshire both date from 1654. The last named was originally an ancient abbey which in 1547 was acquired by Sir Thomas Pope, the emissary of Henry VIII., under the Act of Dissolution. Sir Henry Blount entirely rebuilt the house in the middle of the seventeenth century, employing an architect whom we have little hesitation in placing. The detail of the staircase closely resembles Webb's work in the details at Forde Abbey, and may be said to be practically contemporaneous with it, while other features characterise with Webb's work at Thorpe Hall, especially in the treatment of the door cases. Amesbury with its pedimented portico and rusticated basement storey is typical of the houses subsequently erected by Campbell, Richard Boyle, and William Kent, and is probably another of the designs of Jones' son-in-law. Such houses never attained the palatial effect sought for, there being few examples which successfully emulate the skill of the master.

Thorpe Hall, near Peterborough, was erected for Lord Chief Justice St. John in 1656 by John Webb, who is said to have designed Walcot Hall and Uppington Manor in the same neighbourhood. The gardens of Thorpe are the work of Sir John Nasmyth in 1850.

In the interior we notice the same treatment of carved staircase balustrading with carved terminals to the newels. The ceiling to the Oak room is a large enriched circle of fruit set in a square ornamented with the guilloche pattern. The fruit is tied at intervals with linen work in knots and festoons on the surround reminiscent of the previous practice. Webb's early work does not compare favourably with that of his master. There is a want of care and sense of proportion in the treatment of his pilasters and capitals, and a certain coarseness about many other features, which indicate that he lacked the scholarly attainments of Inigo Jones and failed to grasp the essentials of good design and decorative fitness. He apparently grew out of this as he increased in years, and his later work can be criticised more favourably.

Ramsbury Manor, Wiltshire, was one of the residences of the Earls of Pembroke, dating from Elizabeth's reign. It was practically rebuilt about a quarter of a century later than Wilton in a style that is a great advance on Webb's work at Thorpe, and closely resembles the finish of Melton

Mowbray. There is nothing offensive in the work; it is just a delightful example of Charles II. period, which when pure is the very best period of English domestic architecture. The chimney-piece in the saloon is lighter in detail and more graceful in design than the work of the previous generation, the carving being of the nature of the work of Oakley, Grinling Gibbons and Samuel Watson, whose carved limewood masterpieces are notorious.

This style was in vogue about the time of the Great Fire of 1666. We see it in Talman's work at Chatsworth and Hampton Court Palace, in Wren's work at St. Paul's Cathedral and the City churches, in the chapels of Pembroke and Trinity Colleges, Cambridge, and elsewhere.

Roger Pratt, the architect of Old Clarendon House, which was originally built on the site now occupied by Old Bond Street and Albemarle Street in Piccadilly for Edward Hyde, Earl of Clarendon, was knighted in 1668. He was educated at Oxford, and was apparently in extensive practice at this time, being employed upon the rebuilding of many town residences. He was the architect of Lord Alington's house, Horseheath, Cambridgeshire, demolished in 1800.

Wren was in Paris at the time of the great conflagration, where he appears to have met with Bernini. Two years previously he had submitted designs for the Sheldonian Theatre, Oxford, where he eventually employed Streater to execute a series of paintings which will ever remain a credit to that remarkable English artist.

Wren was born at Knoyle, in Wiltshire, and was about thirty-five years old when he prepared his plan for rebuilding London, apparently in competition with Evelyn, both of whose designs were submitted to the King. Wren's design is preserved in the All Souls College collection. His designs for the new cathedral were not presented until 1673, and the building was commenced two years later, being completed in 1710. As regards the interior decorations to the domes, Wren's original intention was to use mosaic as the agent, being strongly opposed to painting. Emmett's engravings in Longman's "Three Cathedrals of St. Paul," made in 1702, indicate such a treatment for the pendentives below the Whispering Gallery. Many designs were subsequently made for the decoration of the Great Dome by Streater, Thornhill, Stevens, and, more latterly, Sir William Richmond.

It is extraordinary with what horror coloured decoration was held in the minds of the populace at this time. Frescoes and paintings were everywhere assiduously covered up with whitewash or plastered over, resulting in the "discoveries" we occasionally hear of, which reveal the past glories and leave but mutilated frescoes for the awe and wonder of the curious.

Grinling Gibbons, who was born at Rotterdam, is said to have worked under the architect Etty, of York, prior to his patronage by Wren upon Evelyn's introduction. His work eventually became stupendous if half of that attributed to him is authentic. Like Nicholas Stone, however, he was not without his small army of assistants, who include Seldon (killed at Petworth), Watson, who spent most of his life at Chatsworth, Henry Phillips, who worked with Gibbons at Whitehall, and several foreign sculptors, who assisted him in stone and marble carving, as Dyvoet of Mechlin, Laurens of Brussels, and Arnout Quellin of Antwerp. The pedestal of the Charles I. statue at Charing Cross, usually attributed to Gibbons, was executed by a sculptor named Joshua Marshall, but he may also have been an assistant and executed the work under Gibbons' directions.

Gibbons' statuary includes the bust of Sir Peter Lely for St. Paul's, Covent Garden (destroyed 1795), Baptist Noel, Viscount Campden at Exton, the pedestals of the two statues to Charles II. at Windsor Castle and the Royal Exchange, the bronze of James II. at Whitehall, and the font of St. Margaret's at Lothbury. There is at Chatsworth a case of his carving very beautifully executed, which consists of game, a lace handkerchief and medallion most delicately carved in limewood.

It is only possible to mention a few of his works, which are very extensive, embracing widely divergent districts. The vestry of St. Lawrence Jewry, which with the church was rebuilt by Wren in 1677, contains some of his carving, and an exceptionally fine ceiling with a painting by Spagnoletti, representing the Martyrdom of St. Lawrence, which was saved from the Great Fire. The church is of ancient origin, and had been restored and highly decorated in 1618. Upon the reseating of the interior in 1866 the north gallery was removed. The organ is an old one, by Harris, reconstructed in 1875 by Gray & Davison.

Grinling Gibbons is said to have been responsible for

the fine carvings in the Board Room of the New River Company's offices in Rosebery Avenue. The room is the finest of its kind in London. The ceiling contains in the large centre oval a painting of Sir Hugh Myddelton, surrounded by various figures, and his arms are modelled on the ceiling in a circular wreath, and those of Greene on the opposite side. The ornament to the large oval consists of fruit, flowers, and birds all picked out in colours, and having an average projection from the soffit of the ceiling of 4 inches. The smaller panels are descriptive of scenes on the New River, the execution of which was about 1687.

Gibbons worked with Nicolas Alcocke and William Emet on the carvings for the wainscoting of Queen Mary's Gallery at Kensington Palace between 1689-91, the joiners being Henry Hobb, Alexander Forst and a certain Gerard Johnson, described as a cabinet maker, who executed several overmantels in the King's dining-room and the aforesaid gallery for £100. (Vide "Guide to Kensington Palace," by Mr. Ernest Law, F.S.A.)

Building was in active progress throughout the country at this time, and we find the Scottish architect, Sir William Bruce, erecting a house for himself, Balcasky, in 1665, and in 1670 making alterations to Ham House, where he employed a German to make what is believed to be the first sash windows seen in England. In 1671 he was associated with Robert Mylne at Holyrood Palace.

Drumlangrigg, probably from his design, was built in 1675, and is noted for its steeply terraced formal garden. Kinross House was from designs made by Bruce in 1685.

Tredegar Park, Monmouthshire, where Charles fled from Naseby in 1645, had been in the family of the Morgans for many generations. The hall is now the only remnant of Tudor days. Most of the present building is in brick and stone of the time of Charles II., and presents within the most complete expression of the skill of the craftsmen of this time. It is probably one of the last and best of the works of John Webb prior to his decease in 1672.

The staircase has points in common with Thorpe and Ramsbury, while the floriated twisted columns to the porch have an echo in those separating the tapestries in the saloon at Forde Abbey. These alterations were probably carried out in 1670 at the time of the occupation by William Morgan. No expense appears to have been spared to produce the very best representative example of the period, and although subsequent alterations were effected, much of the original character remains. All the principal reception rooms are panelled in oak carved in the most lavish manner. Both the Gilt and the Brown rooms excel in this respect; the ceiling of the latter is a later addition, except for the portion near the walls. By comparison with the fine ceiling to the Gilt room, the original of the Brown room must have been a very bold work indeed.

Sudbury Hall, Derbyshire, which has been frequently altered from Elizabethan times, contains a handsome staircase similar to that at Tredegar Park. The pedimented door leading to the saloon and certain details of the ceilings suggest the hand of Webb, while the carving in the drawing room, the ceiling of the Long Gallery, and many other features indicate the later work of Gibbons and Wren. The overmantel in Queen Adelaide's room is apparently of earlier design than the accompanying ceiling. The ceiling painting in the north hall is from the brush of Verrio and in his best vein. There is a certain similarity in the decorations of the interior, which resemble work of the same period existing at Cassiobury Park, Watford. The house was originally owned by a branch of the Vernons of Haddon Hall, of which Sir John Vernon was the first member to establish himself at Sudbury.

A very unusual modillioned ceiling is to be seen in a house formerly existing in Clare Market, London. The motif is based on the ivy plant, the main stem of which forms the bed mould of the cornice. Although it is quite out of style with the majority of the current work, having been erected in 1670, it is, nevertheless, of much interest, anticipating the style of the late Mr. J. Bodley.

Thoresby House, Nottinghamshire, erected for the Duke of Kingston by William Talman in 1671, is one of the earlier works of this architect, whose name is chiefly associated with his admirable efforts at Chatsworth. He erected Dyrham House, Gloucestershire, in 1698 for Sir William Blathwayt. Talman died some twelve years before Wren and has been rather overshadowed by this mammoth architect. His work, which is of great originality, is always dignified and stately in effect. There is a certain grandeur about the remaining side of his work in the courtyard at Chatsworth, which equals if it does not surpass the work of any other architect of his day.

The Hall of the Brewers' Company in Addle Street, London City, is one of the earliest livery halls of which London possesses so many fine examples. The parlour was panelled in 1670, and the screen in the Hall bears the date 1673. Messrs. Way and Norman give an exhaustive historical description of this work in "Ancient Halls of the City Guilds," published in 1903, from which it appears that the guild was of very early foundation, the records being originally kept in Norman-French until the reign of Henry V. The company was incorporated 16th Henry VI. (1438) and confirmed 19th Edward IV. by the name of "St. Mary and St. Thomas the Martyr," and again by Elizabeth (1562 and 1579) and by Charles I. (1639). James II. gave a new charter in 1685 (subsequent to the building of the new Hall) after the destruction of the previous building by the Great Fire. The premises are spacious for a building occupying such a central position in the City, and entrance is obtained from Addle Street through a pair of carved oak doors giving access to a large stone paved courtyard in which a flight of stone balustraded steps leads one to the Hall situated on the first floor. The principal panelled rooms include the large Hall entered through a screen, with well proportioned windows filled with leaded lights and stained glass decorated with the coats of arms of various early members of the Company. The cresting to the panels separating these windows is carved with arms and figures of varied device, while the tables and chairs have equal interest. The parlour is approached at about the centre of this Hall and is lit by means of oval windows on one side. The panelling, chimney-piece and doors are all of exceptional interest, and from the inscription contained in the overmantel we learn that the Lord Mayor, Samuel Starling, caused the room to be wainscotted.

The arms of the Company are:—*Gules a chevron or, charged with three barrels sable hooped or, between three pairs of barley garbs salterwise proper.*—CREST. *On a wreath a demi-Moorish woman couped at the knees proper, her hair dishevelled or, habited sable, frettée argent; her arms extended, holding in each hand three ears of barley of the second.*

Motto: "In God is all our trust."

The oval table in the parlour was in olden times used on the Company's barge. The kitchen is believed to have escaped the Fire, and contains a lead cistern bearing the date 1671. The writer measured the premises some years back, the drawings being published in *The Architect* for August 26, 1910.

The building was repaired in 1828 by W. F. Pocock, and the houses in front were rebuilt in 1875.

(To be continued.)

HOUSES PAST AND PRESENT.*

(Concluded from last week.)

IN close connection with proportion and relation is what may be called "scale." Perhaps the best example of this is the Japanese garden, which appears as a miniature landscape, where the whole illusion depends on the proper proportion of trees, mountains, and lakes on a small scale. It is chiefly the recognition of scale which makes the old cottage so attractive. In these humble dwellings the inevitable smallness of the plan is accepted, and appears right, because every feature and detail is made correspondingly small. The windows, doors, and staircase are all of the cottage kind, and everything is in scale. In the modern cottage or small house the traditions of villadom suggest that smallness is an evil not to be accepted with due humility, but to be protested against wherever possible. If the rooms are contracted on plan they may still remain lofty—windows may be made large, and the staircase can be made a feature and so on. And the final result is that, instead of a comfortable and comely cottage, the building appears to be vainly struggling against inevitable limitations. Nothing is so important to remember in cottage building as that the smallness of the parts increases the apparent size of the whole. The beauty of the old cottage seems to consist largely in the frank acceptance of limitations. Necessity is made a virtue indeed, and the designer, since he must make a small thing, chooses to fall in love with smallness. Since, too, he can only use simple homely materials, he will make homeliness and simplicity his ideals, and so successful is the result that these simple old cottages often put to shame their more pretentious neighbours.

The planning of old houses may next be briefly considered.

* A Paper by Mr. M. H. Baillie Scott, read at Carpenters' Hall.

In the earliest times the houses consisted of one room. It was unicellular, and its development consisted in the formation of secondary specialised cells, or rooms, grouped round the central apartment. In the old English manor house this development proceeded in two opposite directions from a central axis. This axis was the passage, which went right across the house at the lower end of the hall or main apartment. On the one side of this were developed the apartments for service, while at the opposite (or dais) end of the hall the withdrawing rooms and all that part of the house which was devoted to the elegancies of life were added. As these accessory apartments increased, the functions of the hall were gradually absorbed by the special apartments, and so, like the unused tail of the crab, it gradually shrank to the dimensions of a mere passage with a staircase in it. It still retained its old central position as the axis of the house, and in this condition we find it in the eighteenth and nineteenth centuries in the plans of the majority of houses, with the difference that, on restricted town sites, the kitchens have been pushed from their positions on the side of the hall to the back.

And so, while admitting the reasonableness of the plan which has reduced the hall to a passage merely, we find the type of house which has specialised rooms *only* not entirely expressive of our needs. It lacks focus and coherence, and as we pass from one specialised room to another specialised room never can we say, as of old, "I am here in the house." We never achieve more than the occupation of a compartment. We must either study in the study, dine in the dining-room, sleep in the bedroom, or withdraw to the withdrawing-room. And so we sigh for the old houseplace or hall as a place to foregather and dissemble in. And we sigh for it all the more if we must needs live in a small house, because then our little specialised rooms are each and all too small for comfort; and, as we go from one little plaster box to another little plaster box, it occurs to us that in the confines of this bit of space we have walled and roofed in, surely there is room for one decent apartment, for which it may be worth while to sacrifice something. Let us give up studying in the study, withdrawing in the drawing-room, or even dining in the dining-room to get that. And thus we arrive at the conclusion that the requirements of family life in the small house suggest a conception of the house which shall contain at least one good-sized central room, and, for the sake of this, accessory rooms should either be deliberately eliminated or reduced to a recess in the main apartment. The multiplication of small rooms in the small house is, after all, no expression of actual needs. It is mainly a survival of the snobbery of the Victorian era, when it was the fashion of the Mrs. Wilfers of the day to ape the customs of the rich and great, and, since the reception of visitors was considered the main function of the house, it was necessary to have "reception rooms"—a tradition which still survives in the curious phraseology of the house agent's advertisements. It is also necessary to make a good advertisement from the house agent's point of view; to have the full complement of reception-rooms, regardless of sizes, which could always be "measured into the bay." Do we not know exactly the kind of house that phrase conveys? Everything the house agent affirms of a house is "measured into the bay," including the distance from the station! But why should the plans of our houses be dictated by Mrs. Wilfer and the house agents? It is doubtful if the general public would endure the average modern dwelling were there not apparently an ill-founded idea that houses grow into certain inevitable forms, much as trees do, and that the small house of to-day is the outcome of necessary conditions which make it impossible for it to be beautiful as the old houses were and planned for the comfort of its occupants.

In the planning of the modern houses let us imitate the old house mainly in this: that its plan shall be the outcome of our requirements, and, while so satisfying material needs, it shall also minister to something more than those. Let us design it from within, outwards, and let its outward aspect be the natural expression of its inward grace.

In the matters of decoration and furnishing much may be learnt from the old house. Situated, perhaps, in beautiful and romantic scenery, we shall find, on visiting it, that all those impressions of beauty we received from the hills and trees are confirmed and continued in the house and its adornments. Both house and country seem to belong to the same great world of thoughts and feeling. But if we are visiting a modern country home, or an old house which has been devastated by the trade art of a furnishing firm, how painful is the sudden transition from the soothing influences of fine natural scenery to those "reproductions of the periods" (as they are understood by the modern cabinet maker) which

confront us as we enter the house. Outside on the moorland we were steeped in that deep, faithful earnestness which seemed to brood over the land. Here within in these Louis the Something drawing-rooms, or Jacobean dining-rooms (with machine-made panelling and ancestral portrait complete) we can only wonder and despair to think that so many people nowadays can only make their homes like a bit of a cabinet maker's shop, where just enough art is introduced to bait the hook for the purchaser. It is a perennial puzzle, this modern furnishing. Why do people, otherwise sane and intelligent, apparently delight in surrounding themselves with all kinds of unnecessary and unbeautiful things? There is something hopelessly illogical, too, about the "period" room, for it seems to demand for its completion a corresponding correctness to period in the dress and speech of the occupants. In all these periods of the past, which we delight to copy, there are certain features which were but passing fashions, and certain qualities which belong to all time. The features were generally the weaknesses and mere mannerisms of the style, which are better forgotten, and yet it is in copying just these features that the modern furnisher thinks he is capturing the elusive charm of the old work. Copy if you like the old methods of workmanship, because they were the eternally right methods, or copy the old proportions, or any other essential or vital principle which is right yesterday, to-day, and to-morrow, but let the superficial saliences of style go. Within limits such as these we may rightly design our modern rooms on the lines of old ones, imitating nothing in them but the fundamental principles on which their beauty depends. In such work we shall find space for some expression of that personal initiative which was the characteristic of the old work. We, too, may invent and create, and, in the expression of our joy in so doing, add the essential note to the room.

Having considered some of the vital characteristics of the old house, and having tried to penetrate the secret of its beauty, we may next ask ourselves what are the main conditions of modern life which make it difficult—not to imitate the forms of the old house, but at least to practise the methods which led to its beauty.

One of the foremost is that obsession of Rome and the academic tradition, under the spell of which authority art becomes tongue-tied, and all the spontaneous and human peasant art of the past is replaced by trite formulas. I do not wish to take a narrow view in this matter. I fully appreciate the great powers shown by our designers in modern Classic buildings. But their appeal is largely discounted by the knowledge that theirs is a one-man art, and that they are only realised at great cost by the unremitting and uninspiring toil of unnamed hordes of workers. How different is the impression conveyed by the Gothic building, where the whole structure seems to have been evolved by a band of intelligent craftsmen, each contributing his share to the beauty of the whole. Such a building is a living organism rather than an academic composition. And so, whatever kind of building we evolve in the future, I think it should be one which includes in its scheme—as Gothic work did—that kind of happy human expression of the creative instinct of the workman, which the Classic tradition crushes out of existence.

Having once rid ourselves of the nightmare obsession of the master pieces of the past, and having given up all idea of becoming little Christopher Wrens or little Michel Angelos, we must next demand a reform in our building by-laws which at present make cottage building impossible. Apply a set of these rules to any beautiful old English village and its beauty would melt away. The overhanging gables and low-ceiled homely rooms of the farmhouse would be anathema.

It seems reasonable that architects who have made a special study of building should be allowed to frame their own rules, and not be made to submit to regulations which are condemned by the better informed.

In any reform of modern building which may be initiated let us give up all vast and ambitious attempts to lick creation. Let us eliminate our mean streets, and, taking care of the pennies of our building currency, let us leave the pounds to take care of themselves.

As an architect, I find myself with a rooted prejudice in favour of beginning from the foundations upwards, and not from the roof downwards. Give me a universal and common speech of good building, without any architectural nonsense about it, which will lend a homely beauty to the rank and file of building, and then our great buildings will grow naturally out of that. In other arts the value of simple statement is recognised. We admit its supreme merit in literature, for example. Why, then, in building alone, in

order to command the approval of the critics, is it necessary to be bombastic and diffuse, dragging in the spoils of Rome to give a kind of spurious exterior effect to a building whose real structure is ferro-concrete? Would it not be better, for a change, to give up the rôle of man, the imitative ape, and to take up the nobler and more difficult part of man the creator?

Once the building craft is thus established, we shall no longer find it necessary to escape disaster by confining ourselves in the strait waistcoat of the complete and finite formal scheme. Having found at last the right road, we shall be able to take it, with the assurance that all the accidents which may happen to us there will be happy accidents and joyous adventures, and thus we shall be able to take our chances in the casual manner of the old builders, and so avoid the dismal and trite monotony which is the outcome of the usual modern conception of "town planning" evolved under the auspices of academic committees of fine arts.

But probably the most essential reform required for the re-creation of building as an art is the education of the craftsman by the formation of guilds, where art would be approached from the workshop, and not from the art school, with its dilettante methods. The art school has a way of spoiling horns without making spoons, and its academic traditions are fatal to that folksong kind of beauty which was once the possession of the people. Perhaps one of the latest survivals of this art was in the carving of the old figure-heads on our ships. How delightful it would be in our villages and old towns if, when a memorial was required for a street or square, instead of importing something trite and academic, we could produce locally a gaily-painted wooden effigy which would gain a new kind of beauty as its colours weathered. And then, suppose on entering the village church if, instead of seeing there the usual dull trade carved figures on the chancel screen, designed by the eminent architect, we found there, again, the expression of this local art bright with colour and gay as a wood in spring.

This kind of art would mean far more than the varied interest it would give to our towns and villages. For it would stimulate that creative instinct so long stifled, and men would find joy again in the work of their hands.

And since, after all, building is the expression of ideas—be it the sublime devotion which created the Gothic cathedral, or but the commercial greed which created the modern slum—it may at least be safely assumed that any great advance in national ideas must be reflected in our buildings.

Let us hope that, however deeply we may fall into materialism in the business world, that in the home, at least, art may make its last stand; and that we shall find expressed there those great ideals which have made houses in the past almost sacred places, full of a deep and quiet beauty, in tune with infinite things. The love of home has always been an English quality. Is it not worth while to try to obtain again homes as worthy of our affections as were the houses of the past?

EXPERIMENTAL SCHOOLS: THREE NORTH-UMBERLAND EXAMPLES.*

In designing modern school buildings the knowledge required by architects falls under two distinct heads: (1) That required for housing the children under the healthiest hygienic conditions, while at the same time safeguarding the interests of the teacher by giving him a well-planned school so that he can realise his best self and his maximum power and efficiency, and (2) that required where special circumstances arise for dealing with the structure, either with regard to its stability or from the point of view of expense.

In the following short paper I shall deal with the second head, subdividing it into two clauses as follows: (a) The erection of structures where some method has to be employed to counteract as far as possible the effect of pitfalls or subsidence due to colliery workings, and (b) the cheaper schools movement.

In many cases in colliery districts it is not possible, owing to expense and other reasons, to acquire support for the surface of the site, and, therefore, special precautions are necessary when designing the buildings. The new school at Choppington, Northumberland, opened about a month ago, is a very interesting example under this class. In this

instance the street or road adjacent to the school site forms what is known as a "barrier" between two collieries of different ownership, so that the school is placed in as treacherous a position as possibly could be chosen.

It is customary, I know, for architects to lay a large raft of reinforced concrete over the whole building area. I am of opinion, however, that this is a wrong form of construction to adopt, and certainly in the case of this school such a treatment would not have materially assisted in minimising the risk of subsidence. Some other means, therefore, had to be adopted, more economical and efficient. From observations and experimental tests carried out, I came to the conclusion that some system of reinforced brickwork would meet the case, as this mode of construction would render the walls monolithic and make the building infinitely stronger than if built with ordinary walls. Briefly, the system is to reinforce the mortar course with a wire mesh of best quality mild steel wire, galvanised, and having tensional wires running its entire length. The action of the wire mesh when resisting tensional stresses is to reduce the sectional area, and this tends to close the meshes and compress the mortar, so that the latter develops its greatest strength—namely, resistance to compression. The resistance arrests the tensional stresses in the wire, and is arrested by being held firmly by the bricks above and below it. With the mesh embedded in the mortar joint the latter becomes the strength of the wall and not a filling only, and the continuous bond renders the wall monolithic.

Reinforced brick walls, by reason of their resistance to tensional and lateral stresses, do not require to be of the same thickness as ordinary brick walls, whose strength is only in proportion to their weight. Heavy brick walls are only as strong as their foundations for weight-carrying purposes, and, should the foundations settle unevenly, cracks will appear throughout the building, but by reinforcing the walls with this mesh 10 or 15 feet can be taken away from underneath the building, and the walls will still remain intact and span across like a girder.

I applied this form of construction to the Choppington school, which is, I believe, the first complete school of its kind in the country. Here you have a school built in three sections completely independent of each other, with the foundations and walls reinforced, the foundations on the Hennebique system and the walls of the superstructure reinforced with wire mesh of best quality mild steel wire, galvanised, and having tensional wires running its entire length. The school is built with a 9-inch cavity wall in place of the ordinary 14-inch, and consists of a 4½-inch outer wall, 1½-inch cavity, and 3-inch brick on edge inside. For the classroom walls I have used a 9-inch cavity wall, consisting of two brick on edge walls with a 3-inch cavity between, and the partition walls are 3-inch brick on edge reinforced. The cost of the school worked out at £11 16s. a school place, which is practically the cost of the better-class schools in Northumberland. All the walls are built in cement mortar gauged 2 to 1, and every precaution has been taken to insure the safety of the children.

The other two experimental buildings I intend referring to come under the head of the cheaper schools movement, and are both interesting examples.

The first example is the new school at Barrington Colliery, about sixteen miles from Newcastle-on-Tyne. This school is constructed of wood on brick foundations. The brick foundations are reinforced in two alternate courses with three rows of best galvanised mild steel wire mesh, similar to that used in the Choppington school. This mesh is in 2½-inch widths laid longitudinally along the total length of brickwork. The wood superstructure is securely fastened down by wrought iron bolts and plates embedded in the foundations. The outside framing is formed with 4-inch by 3-inch posts, covered with a layer of felt and 1-inch G and T boarding, fixed horizontally on the outside, and on the inside match-boarding covered with asbestos sheeting to form a dado. Above this dado the asbestos sheeting is fixed on to the 4-inch by 3-inch posts. The corner posts to the building are 4 inches by 4 inches. The floors throughout are of wood joists and boarding supported on sleeper walls. The ceilings are formed with asbestos sheets, and the roofs are covered with Eternit slates laid on spars covered in the first instance with felt. This school works out at £6 10s. a school place.

For colliery districts where the life of the colliery is uncertain, I would strongly recommend a school of this description. It is considerably cheaper than a brick or stone building, and with the exception of the main walls and floors is finished exactly similar to one. A low-pressure water apparatus is installed. Ample heating margin has been allowed, so that the children will not feel cold in winter.

* Abstract of Paper presented to the York Congress of the Royal Sanitary Institute by G. Topham Forrest, Lic.R.I.B.A., Education Architect, Northumberland County Council (Member).

MODERN EUROPEAN ARCHITECTURE.
GERMANY.



[From *Berliner Architekturwelt*.

YACHT CLUB-HOUSE ON THE WANNSEE.—Herr OTTO BERLICH, Architect.

All other materials, hardware and sanitary goods are of the best description.

The other experimental building is the new school erected in the village of Hartley, on the East Coast of Northumberland, about ten miles from Newcastle-on-Tyne.

The population consisting chiefly of miners employed at collieries outside the parish, an application was made to the Board of Education for permission to erect a wood and iron building. The Board, however, were only prepared to recognise a wood and iron building for a limited period, pending the erection of a permanent building, and suggested that a more comfortable and satisfactory building than that proposed should be erected, which would at the same time be less expensive than a stone or brick building, and they invited me to discuss the matter with them. A conference was ultimately held in London between the departmental officials and the officials of the Northumberland Education

Committee. While in London I paid a visit to the sanatorium at Harrow, and was very much struck with the novelty of its construction, which I thought very adaptable for educational buildings. I submitted designs on similar lines to this building, and these received the approval of the Board of Education. The following is a description of the school:—

The school is a timber framed building with slab casing, ferro-concrete foundations, reinforced with $\frac{3}{4}$ -inch steel rods and expanded metal. It is constructed of $4\frac{1}{2}$ -inch by 3-inch framing fixed to foundation, with holding down bolts at angles and about 8 feet apart around the building, angle posts of 7 inches by 4 inches framed to horizontal timbers fixed to all external angles, doorways, &c., ordinary framing $4\frac{1}{2}$ inches by 3 inches with $4\frac{1}{2}$ inches by 2 inches alternate studdings; 9-inch by 3-inch glazed ware air gratings fixed at base of all framing, and holes bored through timbers for

circulation of air throughout the whole of the framing. Bituminous damp course is fixed below sole piece of framing. Two-inch "Fram" slabs fixed to framing on outside, rendered over surface with cement mortar floated to an even surface, and rough cast with mixture of slag and pea gravel. One-inch internal "Fram" slabs nailed to framing, floated and skimmed with washed hair lime and putty, and finished with putty and plaster throughout. A 3 feet 6 inches dado is formed with Portland cement back and finished with Keene's cement, face trowelled and smooth. The roofs are boarded with clean redwood grooved and tongued boarding, and slated with asbestos tiles laid diagonally and fixed with copper rivets.

The cost of the school works out at about 5½d. per foot cube for the building alone, but the fact must be taken into consideration that the building internally is finished exactly similar to one of brick or stone, and that owing to the exigencies of this site, and bad drainage arrangements, it was found necessary to instal an accelerated hot-water installation, and other extras were also incurred. Provided a school of this description was built on a suitable site, it should be possible to erect a building which would work out at 5d. per foot cube, or even under that figure.

The school is designed to accommodate 300 scholars, and the price per head works out at £6 16s. 6d., but to this price must be added £525, being the cost of out-offices and boundary walling, which are of brick and stone, similar to a permanent building, and also the tar macadam playgrounds and drainage.

THE ART OF THE THEATRE.

A YEAR ago Mr. Edward Gordon Craig held, at the Leicester Galleries, Leicester Square, W., an exhibition of drawings and models for "Macbeth" and other plays. In referring to it we remarked that both drawings and models showed individuality of an almost bewildering kind, and that to a spectator without a key they must be more or less puzzling. This week a very similar exhibition has opened in the same galleries, though this time all the models and a large proportion of the drawings are concerned with "Hamlet." From a practical point of view there is this great difference between the two, that, whereas the "Macbeth" designs were made at Sir Herbert Tree's request for the production at His Majesty's Theatre, and were then withdrawn by Mr. Craig, the "Hamlet" designs represent his production of Shakespeare's tragedy in November last at the Théâtre Artistique of Moscow.

The besetting sin of a present-day production of Shakespeare, at any rate in the West End of London, is over-elaboration and a rejection of dignity and simplicity. People flock to "see" the play rather than to "hear" it. Surely the play should be the thing, not the tableaux or the entr'acte music, the costumes, scenery, or any other accessory. A no less insidious danger is the "all-star" caste, with its absence of unity and of inter-dependence. But the latter consideration is too far removed from the concern of this journal to call for discussion here. It is, however, within our province to discuss the setting. Architects should be at least qualified to pass judgment on the archaeological correctness of the scenery in a Shakespearean play. Under present conditions it is wisest for the profession not to exercise their critical faculties, and to accept the stage-manager's interpretation of architectural periods without demur.

Mr. Gordon Craig has revolted against the modern realistic theatre of the Continent, which, he says, forgetful of all the laws of art, sets out to reflect the times and thrusts upon people a grotesque and inaccurate representation of the outward and visible life, with its beauty left out. He asserts that "the duty of the theatre (both as Art and as an institution) is to awaken more calmness and more wisdom in mankind by the inspiration exhaling from its beauty." The theatre towards which he is striving, and which he declares to be irresistibly approaching, aims not so much at effectiveness as at beauty—and abstract and intellectual beauty rather than a physical and visible one. He would like to subordinate the players to the play; he even looks forward to a time when actors, recognising that they have not ideal heads for their particular part, will once more wear masks. In the exhibition are about a dozen designs for such masks—a device which he considers to be the only possible means of expressing justly the outward form of the poet's creations. The idea appears to us eminently justifiable in the case of the Ghost, the Player-King, or even of Claudius; but how Hamlet himself, the creature of a thousand emotions, could be rendered with one fixed ex-

pression is beyond our comprehension. When Mr. Craig began his preparation for the Moscow production he set himself to discover how much of the exterior part of the actors' heads would need to be changed before it was ready for use in the play. After drawing eight heads, he says he gave up the attempt, as he began to realise that every head was either too long or too broad, too pinched or too flat to be transformed into the ideal head for this ideal play. It may be pertinently asked, "What shape is the ideal head?" and "Who is to judge it in default of any instructions by Shakespeare?" Mr. Craig suggests that Mr. Forbes-Robertson has an ideal head, and that until the merest super has got a similar one the play can only be done justice to by employing masks. Obviously the ideal Hamlet head to a Londoner might not appeal to a Moscow audience as being ideal at all. Would it be possible to devise a mask which would be a common denominator all over the world?

A friendly critic has declared Mr. Craig's drawings to be, for the most part, an absolute nightmare jumble of Blake, Sims and Beardsley, with a dash of the Post-Impressionists. This seems a little unfair, because each one of them is unadulterated Mr. Gordon Craig. We do not claim to understand a single sketch, at least hardly one, or to have derived a single lucid idea. But that confession is made with deepest humility. This artist must be an electric battery of inspiration to anyone in sympathy with him, and who can comprehend such a remark as "without trouser pockets Hamlet is no longer possible on the stage"? It is disquieting to wander from drawing to drawing and back again with scarcely a glimmer as to what they mean.

With a sense of relief we turn to the seven models. Mr. Gordon Craig is not only an artist; he is also an inventor, and a very good one too, we imagine. He, in the most practical manner possible, has patented an idea for stage scenery. Mr. Craig preaches simplicity, and, unlike many preachers, also shows how to attain it. The invention consists of self-supporting folding screens which may be changed from one to another of a thousand shapes in a very few minutes, or even seconds. The surface is left quite plain. Each model is a triumph in the art of suggestion; the aim to produce a mood susceptible to the words and action for which the scene will be a background. The grim battlemented castle wall, the sombre room of state, and a brightly-lighted circular columned hall are all readily obtained from these screens. In all there is an element of mystery, of something intangible beyond the stage, which piques the curiosity and allows each imagination play. Accessories are reduced to their minimum.

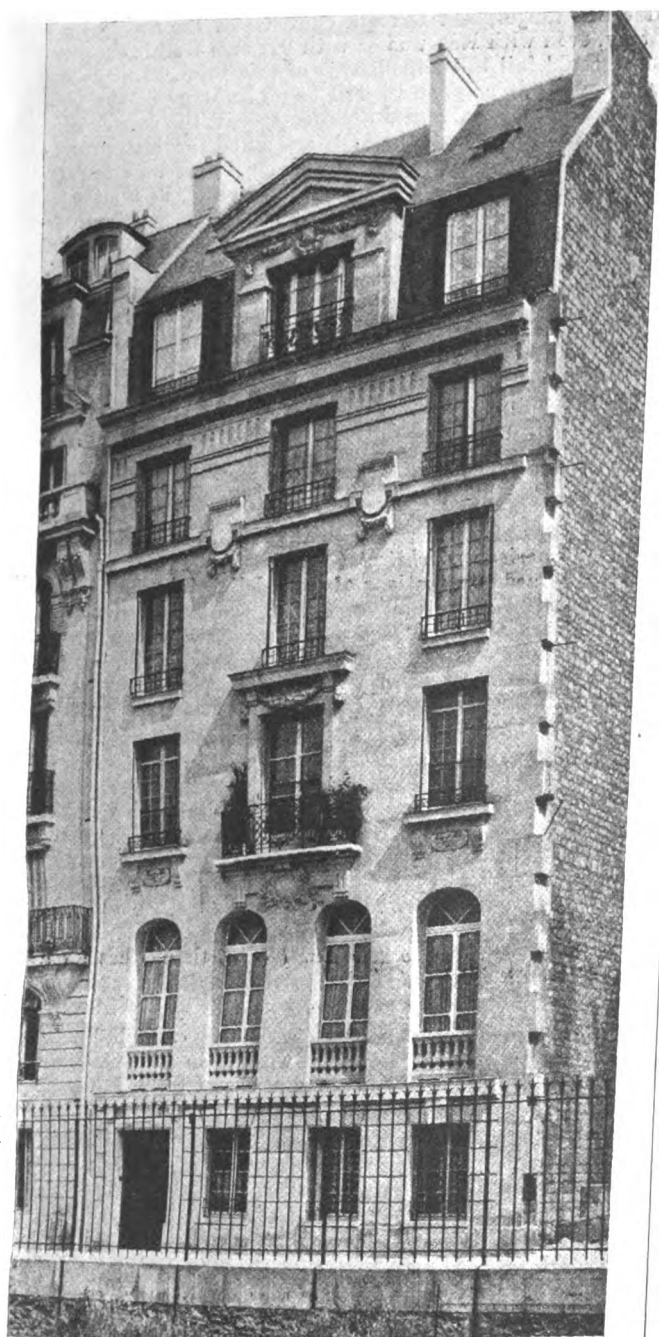
Mr. Craig is a pioneer, some call him an iconoclast. He is certainly a whole-hearted enthusiast, and in his devotion to his ideal invites actor-managers to sample his wares for nothing. No. 62: Suggestion for a new "Shakespeare" stage, bears this note in the catalogue:—"Try it! the idea won't cost you anything now that it's on the counter and nobody is looking. And if you don't take it somebody else will. Do you want me further to explain it to you? Well . . . the explanation is under the mount." It must, however, be added that another part of the catalogue clearly states that the copyrights in the exhibits are strictly reserved, and that the prices may be obtained on application at the desk.

NONCONFORMITY AND ARCHITECTURE.

By MARTIN S. BRIGGS, A.R.I.B.A.

WHATEVER is to be the trend of events fifty years ahead, it is probable that the present age in England will be considered remarkable by historians of the future in this respect at least—that Protestant Nonconformity has become very much a power in the land. It has indeed become powerful enough to render its very name something of an anomaly, for the number of people who do not "conform" in the accepted sense is rapidly increasing, and only a proportion of them are members of the Evangelical Free Churches. Admitting that mere disagreement with the dogmas or ritual of the Church of England does not, nowadays, imply the eccentric or fanatical attitude it was once supposed to do, one must assume some sort of positive belief far more important and far more sincere than is worthy of such an out-of-date nickname.

Nobody can be altogether ignorant of the manifold influences which this change is bringing to bear on every aspect of our national life—on our politics and on our social outlook especially. Nonconformity is an enormous political force of increasing importance, and this even its most bitter critics are prepared to concede. Following its trail

MODERN EUROPEAN ARCHITECTURE.
FRANCE.[From *La Construction Moderne*.PRIVATE HOUSE, RUE PIERRE CURIE, PARIS.
Mons. HENRY GUEDY, Architect.

through one byway of civilisation after another, a thinking man after a while finds himself considering whether or no it has seriously affected the art of this country, and if so whether for better or worse. The most obvious and on the whole the most satisfactory answer will be found by studying the buildings which it is erecting in increasing numbers all through the country.

There is nothing so easy as sweeping condemnation, and condemnation is usually most sweeping when it is most thoughtless. It has so often been said that Nonconformist architecture is beneath criticism that critics have never reflected as to whether this is a desirable or a remediable state of things. But even abuse is sometimes preferable to cold neglect, and cold neglect is unfortunately the prevailing attitude of the architectural press. It is a rare thing for an unconsecrated church, as its opponents charitably call it, to be illustrated in such pages—rarer still for the drawings to bear the name of an architect of note. And yet it never seems to have occurred to the members of a profession who discuss and exhibit all their works among themselves with singular avidity as in any way curious that so large a mass of modern building is simply ignored. Go into a certain

bookshop known to these people and you can buy illustrated monographs on every class of building, from skyscrapers to pigstys, on infectious hospitals or suburban villas, while the workman's cottage is at the present moment perhaps the most widely-discussed of all. That a book was published on Nonconformist architecture some time ago the writer is fully aware. What perplexes him, as a member of the craft himself, is that it is not only unknown to the majority of members of his craft, but so utterly without interest to them. You have architects on all sides—genuinely unselfish men—adding their professional knowledge without remuneration to every scheme for beautifying our cities, yet in this one respect their voice is seldom heard. Here if anywhere the public is completely out of tune with the profession, for a large proportion of the public is contributing generously and rightly to erecting the buildings.

Who is to blame and how has the *impasse* come about? Is it inevitable that these hundreds of thousands of pounds should annually turn into bricks and mortar, with a high and holy object, and nevertheless fail to constitute worthy architecture? As a Nonconformist can I be proud of seeing these countless sanctuaries of my fellow-worshippers ignored by my profession? As an architect can I be proud of all this work turned out by the profession itself? Are the religious buildings of any Church less worthy than the model cottage?

Those critics of Nonconformity who have never studied its past would probably say at random that churches with no history and no traditional ritual cannot be expected to have formed a traditional manner of building. Yet this is no rule in architecture. The design of urban flats has become an elaborate science, the electric-power station follows already accepted lines, and even the airship-shed is beginning to necessitate certain rules and formulæ, but all these were unknown in our grandfathers' day. Nor is Nonconformity without a very worthy and very stirring history, going back nearly three centuries. There were few churches of the Establishment raised in the long years which followed its separation from Rome (and its consequent adoption of buildings designed for the Roman ritual) until comparatively modern times. In this period the chapels of the Baptists, the Congregationalists and the Methodists, or the meeting-houses of the Quakers, were of the same style as the larger and more elaborate churches of London after the Great Fire. They were smaller and plainer, it is true, their builders being for the most part humble men of little wealth, but they still stand as symbolical of the simple and honest if narrow faith which they housed. I know of no more inspiring example than the little meeting-house of Jordans, near Beaconsfield, where William Penn worshipped long ago.

Then came the Gothic revival. The Church of England rushed into the old style of the Middle Ages with frantic enthusiasm, and the middle of the nineteenth century saw tracery and spires of very varying merits replacing the enfeebled Classicism which had preceded it, and which for a few years longer was regarded as constituting the more suitable style for the more lowly "chapel" of whatever size or denomination. Up to fifty years ago the Nonconformist church was almost invariably a severe and often barn-like building externally, divided internally by pews which were narrow in more senses than one. The pulpit was large and prominent, and with the gallery testified to the object of enabling a congregation to hear a preacher. Yet the gallery was never peculiar to Nonconformity, as every visitor to our City churches or to many in Germany knows, rather typical of seventeenth, and especially eighteenth century Protestant places of worship.

So far the Nonconformist chapel may be said to have had a traditional style—scanty as were the attractions of its features—and to have differed only in minor matters from contemporary orthodox churches. But we will now confine ourselves to subsequent building, when the despised "chapel" (after all a misnomer) aspired to change its form as it changed its name. It was natural that a congregation of believers should claim to constitute an individual church on the apostolic model, and perhaps inevitable that what had contented them once as a "meeting-house" should now be deemed worthy of a name more in accordance with the ecclesiastical terminology of the times. From that moment the architecture of Nonconformity seems to have floundered hopelessly and to have lost its way.

It is not that admirable examples have not been erected in certain cases here and there, it is not that lack of means is so often a hampering factor, but the regrettable fact lies in an inability to lead the way in any one direction. No earnest student of architecture could feel that poverty was an insuperable obstacle to art, for in the poorest cottages of country labourers are often found the perfection of simplicity

and of suitable materials. Some of the bare brick churches recently built in East End slums are as admirable in their austere severity and perfect proportions as equally unassuming churches of the thirteenth century. Architecture does not depend for its excellence on abundance of ornament, or indeed on ornament at all, and this is where a layman so often fails to appreciate it, for it is difficult to any man save a connoisseur to admire a barn. And this in fact (though one hesitates to put it in cold print) is where Nonconformity has so often failed. There is nothing to be ashamed of in poverty, less still in those splendid efforts of giving which have constantly raised a church in a new suburb or a wretched slum. But if you have a little less money than your neighbour you need not try and dress as though your income was double his, nor need you build a spire two feet taller than your neighbour's church when you ought not really to spend money on a spire at all. It is better that your brickwork should be good brickwork than that you should economise in that direction and spend your savings on tawdry meaningless carving and tracery. Your object should not be to attract passers-by through external decoration so much as to provide a devotional atmosphere within. You glory in the simplicity of your ritual and you should aim at simplicity in your church.

All of which a reader will say is very high falutin' and ideal, but quite a counsel of perfection. "It is not everybody who agrees with such a view, and more people would be frightened away by austerity than would be attracted by your simple worship-atmosphere theory."

Remember, however, that we have to explain the neglect of Nonconformist building by the architectural profession, and that in its mistaken ambition probably lies the first cause. The next may be in the very frequent cases where real ignorance of architecture has prevailed not only with those who have instigated the building but with the architect they have employed. There is, alas! jobbery even in religious matters, and jobbery accounts for much shoddy work alike in material and in abstract designs. A village or suburban church of the Established order has all the advantage of tradition, of central authority, and (as one can admit in spite of being a Nonconformist) as a rule the assistance of men who by birth and associations have imbibed sufficiently of architecture to select an architect with discretion. The equally worthy and equally disinterested members of a Nonconformist building committee come to a scheme as a rule with minds very innocent of experience in such matters or of tradition. When they find that an architect seems to be inevitable, they usually pitch on one who has designed a chapel in a neighbouring place, or who by dint of pious advertising has caused his name to spread so far. He is seldom a man of note, but men of note are apt to be above such things, and he is perhaps possessed of a reputation in this direction alone. The hardship alike for this committee and their professional (or fairly professional) adviser is that he has no tradition to work on in spite of fifty years of Gothic "chapel" building. He will produce at their behest a cheap, showy church characteristic of Nonconformity only because it is such an anemic travesty of English Gothic. There will hardly be a line in its design which an architect who really loves his work for its own sake can gaze at without a sense of sadness. And it is all so needless.

For there is in the writer's mind no reason why a committee should accept a bad scheme from one of their own faith when an agnostic or a Catholic can produce a far better one. All things being equal one naturally feels the call of *esprit de corps*, but it is carrying the doctrine too far when for its sake one is condemned for ever to worship in an ugly church. One of the first essentials in a church is that it should represent the best work of man and should be an offering of his best work to his Maker.

If you open your competitions, as you often do, to architects in general, you will get outsiders to compete; but you will never find the reputable men of the profession submitting plans until you come into line with all other bodies and allow him the bare justice of selecting the best plan with the help of an assessor. When all secular competitions are so arranged no architect will waste his time and money on others where the best work may be rejected by the butcher, the baker, or the candlestick-maker. Then when the brains of the profession are utilised you will find them proceeding on lines which have already been indicated in a few examples in London. The Latin cross plan will gradually disappear with all the tawdriness. You may get good Gothic or you may find other architecture more suitable; but you will find in all probability that a new arrangement will be most popular, something on the model of Dr. Horton's well-known

church at Hampstead and of others like it. This polygonal type is strange to English eyes, but it is the ideal for preaching, for singing, and for united congregational worship. No one familiar with the ancient Romanesque cathedrals of the Rhine, the magnificent Baroque churches of the seventeenth century, even with Ravenna or with our own Gothic chapter-houses, could fail to see the beauty of this form. But be the solution what it may, there will be no bridging of the gulf between Nonconformity and architecture till the former asks for the best and accepts the best, and until the latter recognises in Nonconformity as worthy an object for its attention and its genius as it has ever had. Meanwhile, as a move towards practical politics, I venture a suggestion which—revolutionary as it may seem—appears the most feasible means for the end in view: that as a subject for one of our numerous annual students' competitions in design there should be selected a Nonconformist church on logical lines. It would be possible for those responsible for the conditions of competition to so arrange it that such restrictions as cost, accommodation, and environment were those which usually prevail, and to encourage competitors to combine suitability, truthful construction, and tradition with the maximum of beauty.

OUR CONTEMPORARIES FROM OVERSEAS.

The American Architect (New York).—Recent numbers have contained illustrations of some delightfully broad work by Messrs. Willis Polk & Co. in California, plans and working drawings by Messrs. Carrere & Hastings for the approach to Manhattan Bridge, New York, and a description with illustrations of the prize-winning designs in the recent San Francisco City Hall competition.

The Architectural Record (New York) for this month has an illustrated article on "Examples of ornamental plaster work of the English Lowlands," these being from Saffron Walden, Essex. Other articles deal with the First Baptist Church, Pittsburgh, a fine work, of which Messrs. Cram, Goodhue & Ferguson are the architects; the ancient architecture of Mexico City; the Colonial architecture of Stonington, Connecticut; and a further series of Early American churches.

Arkitektur og Dekorativ Kunst (Christiania) has for its chief item a criticism and illustrations of the premiated competition designs for the new post office at Christiania.

La Construction Moderne (Paris) has published reproductions of the first three prize-winners in this year's Prix de Rome competition, and views of two of the prize-winning façades in Paris for the year 1911.

Construction (Toronto) gives illustrations of the Little Theatre, New York; Broadview Y.M.C.A. building, Toronto; some residences in British Columbia and Ontario, and a block of business premises in Toronto.

Deutsche Bauzeitung (Berlin) has published further illustrations of competition designs for a town-planning scheme at Düsseldorf; views of the elevated railway at Hamburg; and a description with views, plans and sections, of the new central fire station at Mannheim.

The Architectural Review (New York) has some beautiful views of Mr. Charles A. Platt's work, and reproduces some of the designs submitted for the Minneapolis Museum competition. An article on "Modern City Gates" shows how far in advance of ourselves the United States are in the dignity and importance of city railway stations.

Moderne Bauformen (Stuttgart) makes a feature this month of recent work of the Munich architects, Theodor Veil and Gerhard Herms, which, though fully redolent of the "neu-bau" spirit, yet preserves much of the traditional German feeling, especially in roof treatment. Theodor Hiller, of Göppingen, the architect of the village of Böhmern-Kirch in Württemberg, has several of the buildings in this village illustrated.

Berliner Architekturwelt (Berlin) has this month no particularly outstanding feature, but contains many individual examples of modern German architecture of an uniformly excellent character.

Stone (New York) is of special interest to those concerned in marble quarrying. The sufferings of reinforced concrete from electrolysis are recounted.

The Western Architect (Minneapolis) illustrates work by H. P. Berlage at Amsterdam, Laren and Leipzig; the Hastings Hotel and Apartment House, Minneapolis, and several residences in California, as well as the Women's Club at San Diego and the Masonic Temple at San Francisco.

The Architect.

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FORTHCOMING EVENTS.

Wednesday, September 25.

Institute of Metals: Autumn Meeting at the Institution of Electrical Engineers, Victoria Embankment, W.C. (two days).

Saturday, September 28.

Northern Architectural Association: Students' Sketching Club.

Monday, September 30.

Iron and Steel Institute: Autumn meeting at Leeds (five days). Architectural Association: Day and Evening School re-opens.

Tuesday, October 1.

Royal Society of Antiquaries of Ireland: Special General Meeting at 5 p.m.; Quarterly General Meeting at 8.30 p.m. at 6 St. Stephen's Green, Dublin.

Wednesday, October 2.

Royal Society of Antiquaries: Excursion to Fore, Co. Westmeath.

ILLUMINATION IN FACTORIES.

In the annual report of the Chief Inspector of Factories and Workshops for the year 1911 is included a special report on illumination in factories by Mr. D. R. Wilson, which although it may be said to contain a certain number of truisms and platitudes, imparts nevertheless much useful knowledge.

The industries to which Mr. Wilson's attention was particularly directed were weaving and spinning mills, cloth and handkerchief factories, and composing rooms in letterpress printing works, but the chief results of his investigations are informative for a wider and more general circle, although not necessarily identical in point of detail.

For general purposes the introduction to the report is probably the more valuable. Considering first the daylight illumination, we are told that in order that this may be efficient the amount of daylight admitted should be as large as possible, the lighting should be as uniform as possible, the light should fall on the work from the right direction. These are obvious truisms, except that it is not necessarily a fact that in all cases the amount of daylight admitted should be as large as possible, unless there is some means of shading when the external illumination is particularly brilliant.

Reading on, we gather that it is not meant that the best day-lighted factory would be one of which walls and roof were all of glass, for it is suggested that if the proportion of window area relatively to the floor area is one to ten this would be adequate. Uniformity of lighting it is pointed out may be assisted not only by the even distribution of windows, but by the use of reflective surface on the walls obtained by the use of light tints with matt finish.

Mr. Wilson draws attention to a fact which, although it has long been known, has been very generally ignored in the consideration of lighting of rooms. This is that the illumination of a surface by a constant source at a given distance varies as the cosine of the angle of incidence or the angle between the vertical and the direction of light. From this it is pointed out that where side windows are used the top of the windows should reach as nearly as possible to the ceiling, a few inches difference in this respect making all the difference to the illumination in the centre of the room; also that it follows that the actual height of the room is of importance, and for rooms of equal floor area the higher is capable of far better light by side windows than any other.

Whilst daylight illumination is very much a matter of general principles, when we come to artificial lighting we find that there is far more scope for consideration of detail. The fundamental principles for artificial lighting are:—(1) The light should be adequate, having regard to the nature of the work carried on; (2) the light units should be arranged so as to cause no "glare" effects;

(3) the light units should be so arranged as to produce no troublesome shadows.

The adequacy of the light for a given industry, it is pointed out, depends upon a number of considerations, such as the nature of the work, fineness and colour of material, &c. One important point must be particularly remembered: *ceteris paribus*, the intensity of illumination should vary with the "albedo" or diffused reflecting power of the material upon which work is being done; in other words, a stronger illumination is required for dark than for light materials.

In determining therefore the amount of light which is required for working in any particular instance, care must be taken to distinguish between the illumination intensity and the surface brightness of the object looked at. Thus for example it was found by Mr. Wilson that in a linen-weaving shed the illumination intensity on brown cloth was 3.4 foot-candles, whilst the surface brightness was only 1.0 foot-candle; the meaning of this being that the brightness of the brown cloth illuminated with 3.4 foot-candles was the same as if it had been perfectly white and illuminated with an intensity of 1.0 foot-candle.

The diffused reflecting power or the degree of whiteness of the surface is termed "albedo," and is expressed as a ratio of the surface brightness of the illumination intensity, generally in terms of percentage.

Thus the "albedo" of the brown linen above referred to was 33.3 per cent.

The important subject of "glare" in artificial lighting is discussed at length, and Mr. Wilson follows Professor Weber in his definition of the means of estimating glare thus:—"A system of illumination may be described as 'glaring' when it exceeds any of the limits specified in the following, namely:—(a) If the ratio of the intrinsic brilliancy of the source of light to that of the illuminated surroundings exceeds a certain limit. The ratio should not exceed a value of about 100; (b) If the absolute intrinsic brilliancy of the source exceeds a certain value. The brilliancy of the open candle flame (about 2.5 candles per square inch) might be taken as a safe limit; (c) If the angle between the direction of vision of the eye when applied to the work it is called upon to do (e.g., when gazing at a desk, blackboard, or diagram on a wall, &c.), and the line from the eye to the source of light is too small. This minimum angle may be provisionally assumed to be about 30°; (d) When the extent (apparent area) of the illuminating body is too large. The source should not subtend an angle of more than 5° at the eye."

Glare we are told can in most instances be remedied by raising the light source sufficiently or by efficient shading between the eye and the light source. It is also pointed out that the illumination intensity of a light unit is at its maximum when the height of the unit vertically above the horizontal plane of work is 0.71 times the horizontal

distance between the given point and the point on the plane vertically under the unit.

A careful distinction must be made between glare and mirror reflection, which when work is being done on a surface more or less polished and so highly reflective, is apt to cause annoyance and inefficiency of light, the light being reflected to the eye of the worker instead of illuminating the working surface.

The question of shading and its effect on the work and efficiency of light, particularly with artificial light, is discussed, but we need not go into the discussion in detail, as it is based mainly on the application of common sense, so that although it is desirable that attention should be drawn to it in such a report there is no advance in scientific knowledge.

The question of the colour of artificial light, with its considerable range from the orange red of ordinary coal gas to the violet of the mercury vapour lamp, is only briefly touched upon. Mr. Wilson hints that the spectral composition of light and the emanation of infra-red and ultra-violet rays are of importance, but dismisses the subject with the observation that scientific opinion is still divided as to their effect on the eyesight.

The results of detailed observations in various factories are given in the report, and comparison between them is made in terms of window efficiency, according to the method first suggested by Mr. P. J. Waldram, as although Mr. Wilson considers that in this method the definition of window efficiency is not strictly accurate, the standard, although approximate and arbitrary, is of great value when rooms of different construction have to be compared.

NOTES AND COMMENTS.

ALTHOUGH we may consider that the fight in Liverpool over the podium of St. George's Hall is practically at an end, the opponents of the adopted scheme are still endeavouring to make a noise, and in the *Manchester Guardian* there has been published an interview with Professor Reilly, which, if correctly reported, does not seem to us in very good taste. He is said to have sharply criticised the "municipal bigotry" which threatens to mutilate the building, and described the endeavour which is being made to secure the veto of the Corporation proposal. "At the bottom of the whole thing," he said, "is the fact that Lord Derby is a fighter. There was a long delay in the completion of a memorial to Queen Victoria, and the Earl, who is the chairman of the King Edward Memorial Committee, is determined that this time matters shall move a little quicker. He may think the scheme decided upon a good one, but he is chiefly concerned to get on with the thing during his Lord Mayoralty of the city."

Professor Reilly is not content with abusing Lord Derby. He falls foul also of Mr. Norman Shaw, an acknowledged leader of the architectural profession before the Professor was born. "Now, Mr. Shaw is a very old man and is greatly respected," Professor Reilly said, "but we do not think he is the appropriate man to decide this question. Mr. Shaw was a pioneer in the days of the Gothic revival, but he has never quite reached the Classic style. All the younger men are now studying classical architecture with renewed interest, and much purer architecture is coming in." We do not recognise the purity of the Franco-American Neo-Grec, which the Liverpool School of Architecture, with Professor Reilly as "pioneer," is adopting in feeble imitation of the *Ecole des Beaux-Arts*, nor can we admit the claim of the youngest pioneers that their judgment in respect of Classic architecture is superior to that of Mr. Norman Shaw and Mr. Belcher. Sir Aston Webb and Professor Reginald Blomfield may differ in opinion, but it is only the cocksure young pioneer who knows all about it and abuses his opponents.

In the provisions of the Housing, Town Planning, &c., Act, 1909, the Local Government Board are empowered to make rules fixing a scale of costs to be applicable on an arbitration relative to the compulsory purchase of land, and such a scale of costs has now been fixed and published with the object of minimising, or at least keeping within reasonable dimensions, the costs in the case of arbitration under the Act. Thus it is provided that if counsel and expert witnesses are employed without the direction of the Local Government Board no costs should be allowed in respect thereof.

The modification of building by-laws for rural districts, to which we recently referred, has been utilised as part of the argument employed by the opponents for a scheme of cottage building brought before the Woking Urban District Council by a special committee appointed twelve months ago to consider the housing of the working classes problem, and no doubt this revision of the by-laws will be made a handle for postponing, if not defeating, future schemes in other localities; but the real objection in the case of Woking appears to be that the committee were too optimistic in the small allowance they made for repairs and empties.

The work of the Royal Commissioners appointed to make inventories of the ancient monuments in Great Britain and Wales is satisfactory in that it has more far-reaching results than the mere preparation of a catalogue. During their visits of inspection interest is excited, and monuments which have been overlooked or ignored are brought to light, as in the case of the Welsh Commission on their recent visit in the County of Carmarthen. Under the chairmanship of Sir John Rhys the commissioners devoted many hours to a survey of interesting places and monuments south of Carmarthen. Chief among these was the great Concentric Castle at Kidwelly, where the commissioners were received at the barbican by Mr. Dudley Drummond, of the Cawdor estate office. A thorough inspection of the magnificent ruins was made under the guidance of Colonel Morgan. Particular attention was paid to the remains of the unique chapel, and to the stone vaults tower, on the walls of which is a crude drawing in the plaster of a huntsman with hounds at heel. The vast moat and outworks were examined minutely, and various suggestions were made as to the preservation of the castle. At Kidwelly Church the figure of the Madonna and Child received special attention. At Pembrey the commissioners were interested particularly in a massive stone font which was rescued recently from base use in a neighbouring farmyard. A visit was also paid to the tomb in Pembrey churchyard of the niece of Josephine, consort of that illustrious individual—as the inscription says—Napoleon Bonaparte, who was wrecked on the Cefn Sidan sands. Returning by the coast road, the commissioners inspected the sand-buried city of Hawton St. Ishmael's, the foundations of which were recently exposed.

The text has been issued of a Bill to amend the Housing of the Working Classes Acts, 1890-1909, and the Small Dwellings Acquisition Act, 1899, and to encourage private ownership of dwelling-houses and business premises amongst the working classes, or by persons otherwise of small means. The purpose of the Bill is to relax some of the provisions of the Small Dwellings Acquisition Act, 1899, with a view to encouraging local authorities to set the Act in operation, as, although this Act was passed with a view to encouraging local authorities to assist artisans to purchase their own houses, very little use has been made of its provisions, and the amount which may be lent and the percentage of the value have now both been raised, but the benefits are still restricted to persons of the working class or otherwise of small means, as the capital value for a freehold or leasehold interest of not less than 99 years must not exceed in the case of a dwelling-house £400, in the case of a shop or business £500, and in the case

of premises consisting of a dwelling-house and shop or business premises forming contiguous buildings and occupied together £600. With the view of preventing the machinery of the Bill being exploited by speculative builders it is provided that no advance shall be made to the same person in respect of more than one house or more than one house and shop, being contiguous buildings occupied together. The Bill, when passed, may be cited as the Housing of the Working Classes Act, 1912. It is about time, we think, that there should appear upon the statute book some Acts relating to the Housing of the Middle Classes.

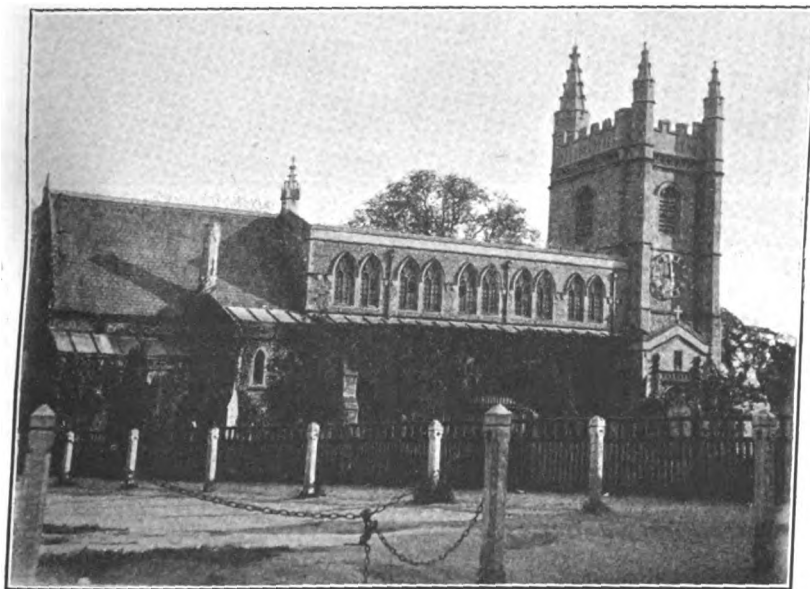
BEACONSFIELD, HEDGERLEY, AND BULSTRODE PARK.*

BEACONSFIELD, which means a clearing in the beeches and has no reference to a beacon, is situate in the county of Buckinghamshire, and consists mainly of one long, wide street and two shorter ones. Beaconsfield is not mentioned in the Domesday Book. It is not far from the River Thames, and was in the old coaching days a noted stopping place for the London and Oxford coaches. The church of St. Mary and All Saints is built of flint, with Bath stone dressings. It is a rich and well-proportioned Perpendicular building with a fine tower containing a clock and eight bells. The tower is the oldest part, and dates from the fifteenth century, the church itself having been restored in 1869. There are some fine brasses in the church, including

decoration. They have wide chimney-pieces of the usual Tudor type in fine freestone. In the churchyard John Hampden in 1633 exercised his trained bands on a Sunday, and for this he was summoned before the Council.

The town is chiefly famous for its connection with Waller, the great poet and politician, who lies buried in the churchyard, and Edmund Burke, the great statesman, orator and philosopher, who was buried in the church.

Edmund Waller—"maker and model of melodious verse"—was the nephew of the great Hampden, and probably by his influence was returned as Member of Parliament for Amersham before he was eighteen. His conduct in the early part of his political career appears to have been formed on his uncle's principles, for he opposed the measures of the Court with such energetic vehemence that he was chosen manager of the impeachment against Judge Crawley, whose decision on the great question of Ship Money had been in favour of the King. Within two years afterwards his opinions were so much changed that he engaged in a conspiracy, whose object was to "seize the Tower and admit the monarch's forces into the City, to surprise the Militia, and to dissolve Parliament." The despicable cowardice he displayed when the plot was discovered and his abject and garrulous confessions saved his life. After paying a fine of £10,000 Waller was released from a twelve-months' imprisonment and went to France; but the splendour of his establishment there reduced him to distress, and he obtained the permission of Cromwell to return to England. He now became acquainted with the Protector, and wrote a panegyric on his conduct; but at the period of the Restora-



BEACONSFIELD CHURCH.

one in the centre aisle to Edmund Burke, but of very recent date. There is another on the north wall, dated 1372, to Robert Lee and issue. Another dated 1609 to John Warren and his wife, Elizabeth, and four sons and two daughters. In the church are a very old chest of the time of King Charles I., and an old lock and key. In the vestry is a cabinet made out of a piece of furniture used by Edmund Burke at Gregories. Underneath the organ, but now hidden from view, is a curious incised slab to Thomas Waller and his wife (1626-27), displaying two flaming hearts conjoined. The parish register begins in 1539; the church register in 1631. Near the church is an old timbered building formerly the rectory. It is supposed to have been a sub-priory to the Abbey of Burnham. Richard Capel, Rector of Burnham, who died in 1500, bequeathed £40 for the erection of a rectory house upon the site of the ancient nunnery, to be built of timber and made a "fayre large house." The execution of the trust was begun by his successor, William Baron, afterwards Bishop of London, and completed by Richard Lawson, who followed in 1525, and the house continued to be used as a rectory till 1868. It is a timber building forming three sides of a square of two storeys and an attic. A circular staircase leads to some handsome rooms on the first floor, the timbers of which show traces of arabesque

tion employed "his imagination, his elegance, and his melody with equal alacrity" for Charles the Second. "He that has flattery," says Dr. Johnson, "ready for all whom the vicissitudes of the world happen to exalt, must be scorned as a prostituted mind, that may retain the glitter of wit, but has lost the dignity of virtue." Towards the decline of his life he purchased a small estate at Coleshill, where he was born, with the desire "to die, like the stag, where he was raised." He died, however, at Beaconsfield. His tomb is of white marble and cement, and is ornamented with a pyramid resting on four winged skulls and rising from the centre of a flat slab of white marble on which are placed four urns, one at each corner. Each side is covered with a Latin inscription, which lauds his talents as a poet without laying much stress on his political career.

But it is to Burke's tomb in the church that we naturally wend our steps. We find a simple stone under a pew in the aisle, and on the wall a marble tablet tells us that "near this place lies interred all that was mortal of the Right Honourable Edmund Burke, who died July 9, 1797." More recently a tablet with a portrait in relief has been placed near this inscription.

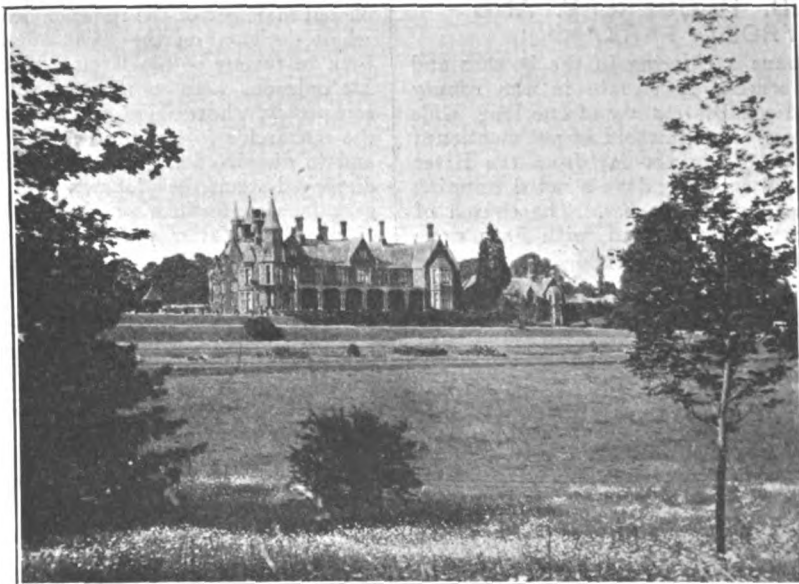
Beaconsfield may well hold Burke in honour. He laboured there assiduously alike as country gentleman, as statesman, and as philanthropist. There he entertained many eminent statesmen, and held out the hand of fellowship to struggling students of art and literature.

* Read at a meeting of the Upper Norwood Athenæum, by Arthur J. Pitman.

Edmund Burke was born in Dublin on January 1, 1730. At Trinity College, Dublin, which he left with the degree of Master of Arts in 1751, he was distinguished for his debating powers at meetings of the Historical Society. He proceeded to London to study for the Bar, but was, however, averse from the profession of the law, and sought means of support from general literature. The success of his Essay entitled "A Philosophical Inquiry into the Origin of our Ideas of the Sublime and Beautiful" established him in literary life. He was appointed editor of the Annual Register. Dr. Johnson, Hume, Lord Lyttleton, Garrick, Reynolds, Warburton, Soane, and others of equal celebrity sought his acquaintance. In 1761 he entered the public service in a semi-official capacity, became private secretary to the Mar-

quis of Rockingham and it was found that James Barry had painted it, and on Burke learning that the painter was in the deepest straits of poverty he brought him to London, making him an allowance, and sending him to Paris and Rome to complete his studies. He became a member of the Royal Academy, and many of his pictures are to be seen at our national museums and galleries.

In 1768 he purchased the estate in Bucks called Gregories, about a mile from Beaconsfield. Here he lived not extravagantly, but frugally, driving four black horses and spending £2,500 a year. On July 15 he was buried in the parish church, his pallbearers being the leaders of that old Whig party which for thirty years he had animated, instructed, and at last converted to Conservatism. A little before his



BULSTRODE HOUSE.

quis of Rockingham (head of the Cabinet in 1765), and Member of Parliament for Wendover. Pitt, afterwards Earl of Chatham, extolled his eloquence, and he soon took a leading part in Parliamentary debate. He accepted office as Paymaster-General of the Forces in 1782, was made Lord Rector of Glasgow University in 1784, and in 1786 entered upon the most eventful and difficult task of his political life—the prosecution of Warren Hastings. On February 13, 1788, he commenced his celebrated speech, lasting over four days, and characterised as a "tempest of invective and eloquence." The trial lasted seven years, and terminated with another speech from Burke which lasted nine days. In 1794 Burke applied for the Chiltern Hundreds, and contemplated accepting the title of Lord Beaconsfield. But his son Richard was at the moment seized with a sudden illness and died. Burke was broken-hearted, and his career was over. "I am torn up by the roots, and lie prostrated in the earth," he said. He cared nothing more for titles and honours, and he died on July 9, 1797. Burke had great qualities, which were obscured by the want of minor qualifications. He was an unrivalled orator, but not a skilful debater; his imagination was exhaustless, but he had no play of fancy; the exercise of his powers was not tempered by discretion, his eulogy was flattery, his invective abuse. There was truth in Goldsmith's complaint that he allowed his passions to overpower his reason,

"And, born for the universe, narrowed his mind;

And to party gave up what was meant for mankind."

It is not, however, often permitted even to the wisest and most influential of patrons to be able to raise from poverty and obscurity two such men as the poet Crabbe and the painter Barry. George Crabbe, the son of a village schoolmaster and parish clerk in Norfolk, came to London in 1780, having resolved to try his chances in literature. He soon found himself in great straits, and in vain applied to Lord North, Lord Shelburne, and Thurlow. At the beginning of 1781 he wrote to Burke, who came to the struggling poet's rescue. He read his poems, persuaded a publisher to issue them, and took Crabbe to Beaconsfield, where he stayed with Burke till his reputation and position were firmly established.

In 1763 Burke happened to be at an exhibition in Dublin, where a picture entitled "The Conversion by St. Patrick of the King of Cashel" attracted universal attention. On

death he caused to be read to him Addison's paper in the *Spectator* on "The Immortality of the Soul."

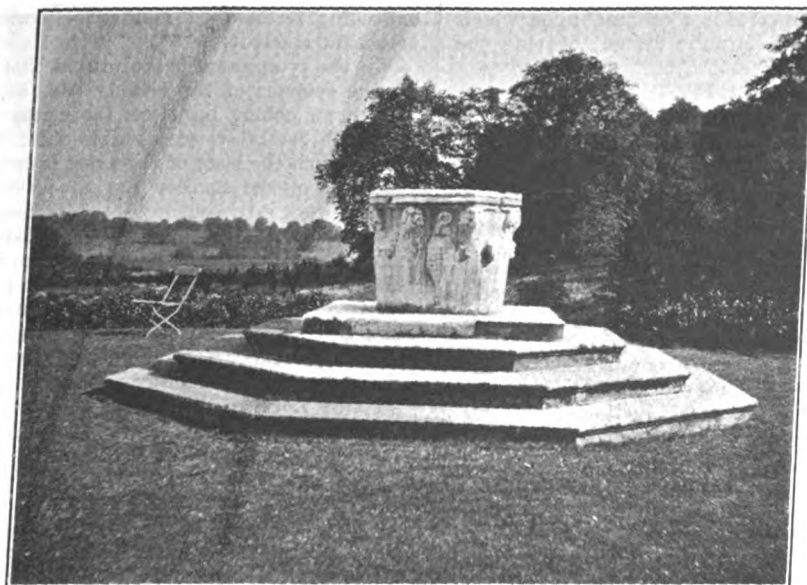
"It is," says Lord Morley of Blackburn, "a touching picture to follow him from the heat and violence of the House of Commons, where tipsy squires derided the greatest genius of his time, down to the calm shades of Beaconsfield, where he would with his own hands give food to a starving beggar, or medicine to a peasant sick of the ague; where he would talk of the weather, the turnips, and the hay with the wain men and the farm bailiff; and where in the evening stillness he would pace the walk under the trees and reflect on the state of Europe and the distractions of his country."

HEDGERLEY.

The church of St. Mary the Virgin, standing on the brow of a hill, is a structure of flint and rubble in the Early Decorated style, consisting of chancel, nave, south porch, and an embattled eastern tower containing three bells. The pulpit and communion rails for nearly 200 years formed part of the parish church of Parham, in Antigua, in the West Indies, destroyed by earthquake in 1842. King Charles II. is said to have visited this church, and, noticing that the Communion Table was without a cover, took off his cloak and laid it on the table. Part of the cloak has been framed and glazed, and now hangs on the wall of the church. There is a palimpsest brass with effigy to Margaret Bulstrode dated 1540. It was formerly in the Abbey of Bury St. Edmunds as a memorial to Abbot Thomas Totyngton, 1312. In the vestry is a table of the Ten Commandments, painted on canvas, and repaired in 1722, with an illustration of a breach of each. The register dates from the year 1538.

BULSTRODE PARK.

A legendary explanation of the name states that when William the Conqueror subdued this kingdom he gave the estate of the Shobington family, who lived here, to one of his followers, and sent 1,000 men to assist him in taking possession. But the Saxon owner, calling in the aid of his neighbours, gallantly resisted the invader, entrenching himself within an earthwork in the park, which is still shown as evidence of the story, and, as his party wanted horses, mounted them upon bulls, when, sallying out of their camp, their strange equipment so confounded the Normans that many of them were slain. The King, hearing of the affair, sent for the valiant Saxon, with a promise of safe conduct



VENETIAN WELL-HEAD, BULSTRODE PARK.

to and from his Court. The Saxon paid the Conqueror a visit riding upon a bull, accompanied by his seven sons similarly mounted, and the result of the interview was that he was allowed to retain his estate. In commemoration of these events he assumed a bull's head as his crest, together with the name of Bulstrode.

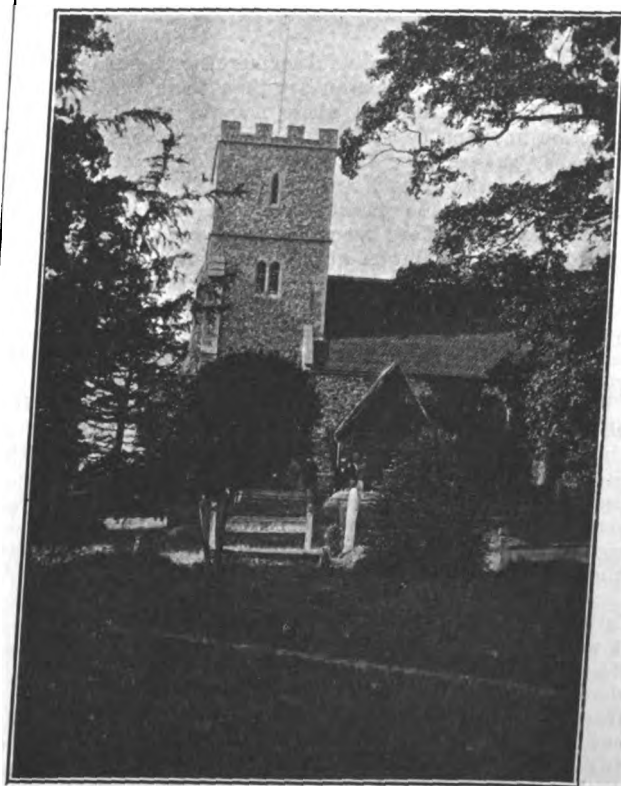
Bulstrode Park is one of the most attractive and most interesting of places in the county of Buckingham. Attractive not only on account of the almost exceptional sylvan beauty and picturesqueness of the park, with its charming undulations, its beautiful beech and oak-clad slopes, and its deep and spacious valleys, which sweep through it as though they were in far off and probably pre-historic times the beds of broad and rapid streams, but also on account of its fine woodland scenery and the almost pictorially natural grouping of its forest trees. In the pleasant grounds, also, which more immediately surround the mansion, some of the most majestic specimens of the rarer trees which flourish in this country may be met with in all directions. Interesting, also, and that in a remarkable degree, on account not only of its antiquities as embodied in the antiquarian and historical records of the country, but also as illustrated in the histories of the great and well-known names with which it has from time to time been associated. It is a far cry from Caesar and his Legions to the time of King Edward the Seventh; but all those centuries have been more or less concerned in the making of the history of Bulstrode and of those who, for the last nine centuries at least, have been the successive possessors of these lands. Templars, Knights of St. John of Jerusalem, abbots and monks of early church foundations, and statesmen of the highest eminence have in their day and generation contributed to carry on the prestige of an estate which for so many centuries has formed a part of the natural history of the country.

The preceptory of Bulstrode, or House of the Knights Templars, certainly existed in 1276, for in that year Brother John the Preceptor was accused of taking a bribe of half a mark from a certain robber to let him go free. An inquisition taken in the year 1330 reported that the manor of Bulstrode had once formed part of the lands of the Templars, and after the annulling of their Order passed to the Hospitallers.

A subsequent owner was Bulstrode Whitelocke, the author of "Memorials of English Affairs," a statesman possessing great talents and considerable learning; but the flexibility of his conduct during the Civil Wars of the seventeenth century has occasioned his memory to be stigmatised with want of principle. On his death it passed to the infamous Judge Jefferies.

George Jefferies, who afterwards became Lord Chancellor, and presided in 1685 at the Bloody Assize in Somerset, built a house here in 1686. He was the man of whom Charles the Second declared that he had "no learning, no sense, no manners, and more impudence than ten carted street walkers," and of whom Burke wrote that he earned "eternal disgrace at the merciless commission which sat in judgment on the rebels of Monmouth's insurrection. The Chief Justice hanged 330 persons, and transported 800 others to the

Colonies," a punishment which in those days was worse than immediate death. On his attainder at the Revolution the place reverted to the Crown. William the Third granted it to William Bentinck, the first Earl of Portland, who did so much to pave the way for the accession of William the Third and Mary II. He greatly improved the house, and died there in 1709. Bulstrode contained for a time the celebrated Portland vase discovered near Rome in the sixteenth century, and supposed to date from about the year 200 A.D. It was deposited in the British Museum in 1810, when Bulstrode was sold to the Duke of Somerset. On the death



HEDGERLEY CHURCH.

of the Duke of Somerset in 1885 the Bulstrode Estate passed into the possession of his youngest daughter, who in 1865 married Sir John William Ramsden, Bart.

Early in the nineteenth century the notorious Dick Turpin made a raid on the Duke of Portland, who had just entered Bulstrode from the public road, and was driving up to the mansion when his escort was driven off by the brigands, and the Duke himself was robbed of his watch and accessories.

On one side of the mansion stands the old ivy-clad square battlemented tower and its archway, commonly known as the

Pigeon Tower, being inhabited by a colony of doves. At the end of an avenue of lime trees is a column, upon which stands a solid leaden vase of heraldic design, bearing the words:—

"If by each rose we see
A thorn there grows,
Strive that no thorn shall be
Without its rose."

In another part of the grounds stands the very beautiful Venetian well head of early date, on the sides of which are two finely-sculptured shields, with armorial bearings upon them; and on its base may be noticed the circular water cups, cut out of the stone, for the birds to drink from, as was the custom in Venice. This beautiful well head came from the Palazzo Moro built on the site of the traditional residence of the presumed original of Shakespeare's "Othello."

The chief feature about the camp is its size, which is unusually large for Berks. The entrenchments are double on the north-east side, treble at one or two parts, and enclose an area of twenty-one acres. The breaks on the north-west and south-east sides are probably larger now than they originally were, owing to damage or subsequent modification of the earthen banks. The large oak trees growing on the ramparts are a blemish.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

IV.—FACADES.—DOORWAYS.—CAMPANILI.—DOMES.

(Continued from last week.)

AN entirely different façade, and one which is the fittest in Italy to rival those of the northern cathedrals, is that of San Lorenzo at Genoa. It is mainly remarkable for the exquisite, indeed unrivalled, beauty of its three western doorways.

There is nothing more beautiful nor more thoroughly Gothic in the whole realm of Christian art than these three great portals of Genoa Cathedral, whose natural polychromatic construction has been descanted upon. They cannot be said to vie with, because they are in many respects unlike, the general type of the great French doorways. Yet in some particulars they are so puzzlingly like a certain class of French work as to afford room for endless conjecture, and there is perhaps no point on which trustworthy documentary evidence would be more interesting than any bearing on their construction would be. The north and south-west doorways of Rouen Cathedral have many features which suggest a connection with these Genoese ones, though the French portals must be at least a century earlier.

The detail of the sculpture of foliage is very similar, in both rather Italian than French in its character, whilst the rich effect obtained at Genoa by inlaying black marble with white, and white marble with black patterns, finds its counterpart at Rouen in an ingenious sinking of the face of the stone with deeply-cut indentations, which at a little distance produce by their deep shadows almost the same effect as that attained by the marbles of Genoa.

Another remarkable feature in this façade of Genoa Cathedral is that, unlike any other Central Italian example, it was apparently intended to have been finished with two steeples. This fact, added to the mixed French and Italian character of the sculpture, and to the distinctly French treatment of the mouldings, which are arranged and undercut in a way rarely, if ever, seen in Italian work, tend to the belief that this is not to be claimed as pure Italian. Either it was executed by a Frenchman or by an Italian who was well acquainted with the architecture of the north of France.

Be this as it may, we have here the harmonious combination of ideas derived from different sources, and entirely consistent with the precise object, position, or locality of the building in which they are applied, while avoiding the remotest semblance of mere copyism of other men's work.

The date of this façade of Genoa Cathedral may be fixed as towards the close of the thirteenth century, nearly a hundred years later than the side western doorways of Rouen Cathedral above alluded to. It is divided into three portions by two pilasters corresponding in position with the arcades of

the nave. Each division has a grand doorway, the centre one being recessed in four orders, with every rich sort of ornament about it.

In the tympanum is sculptured The Majesty, surrounded by the symbols of the Evangelists, and immediately below, within an oblong panel, is the martyrdom of St. Laurence, in which devils are seen stirring the fire under the gridiron upon which the body of the saint is extended.

Some of the smaller shafts are completely covered with carved work representing eagles in medallions and foliage in ovals, while in the jambs of the doorways themselves foliage and minute groups of figures are sculptured with a delicacy and beauty that defies description. Among these groups may be discerned the Tree of Jesse, terminating at the top with the Crucifixion and scenes from the life of the Blessed Virgin, commencing at the bottom of the jamb with the Annunciation, and going on through the Visitation, Nativity of Our Lord, Epiphany, Presentation in the Temple, and Massacre of the Innocents, to the Flight into Egypt.

The façade terminates in the centre in a gable, beneath which is the chevron-moulding and corbel-table, which is universal in this position, and it was originally intended to be flanked by two towers. Of these the southern one has alone been completed, but in a very late style, and with an octagonal cupola. The usual disposition of alternate bands of black and white marble obtains here, as in other Genoese façades, from the ground to the gable, but so broken by the carvings of the doors, the numerous small windows, and the inequalities of surface, as to be by no means unpleasing.

Within the recesses of the portals the plane surfaces have all a pattern on them in coloured mosaic—a novel decorative feature, still beautiful, though the rich glow of colour is somewhat dimmed by the falling out of the tesserae here and there.

It is curious and instructive to observe, in considering the lower part of this glorious façade of San Lorenzo at Genoa, how the Italians clung to Classical forms in their buildings, even when the Romanesque had long passed away. The plinth is decorated with arabesques in low-relief containing heads of animals and men, in the style of a Roman sarcophagus. Immediately below the bases of the shafts is a row of acanthus leaves. The abacus is thoroughly Classical, almost Renaissance, in feeling, and the same thing may be seen in two of the finest examples of Italian Pointed—Giotto's campanile at Florence and the façade of Siena Cathedral.

The ingrained Italian practice inherited from the ancient Romans of making the exterior ornamentation a mask to the structure is particularly observable in the elaborate façades added to their cathedrals in the Gothic style, which do not even follow the outline of the roofs hidden behind them.

The existence of such a feature at all is wholly inconsistent with the spirit of mediæval architecture; one might say of architectural art altogether.

In the elevations of the cathedrals at Orvieto and Siena, as seen in photographs or engravings, that is, without the rich play of colour which is one of their charms, we have most inconsistent and illogical designs. The nave and aisles are each finished with a gable, which are of lofty pitch in themselves, but are set upon low façades, which, in comparison with those of the northern cathedrals, seem to have had a whole storey taken out of them. A strong horizontal line below the springing of each seems to cut them off from the substructure. Between them and the angles of the façade are groups of pinnacles, which, as if to show their utter uselessness, are not carried down as buttresses to the ground, but spring from the impost line of the doorways as merely ornamental features; and the great rose window is set in a square panel, as if to intensify its separateness and want of connection with any other portion of the fabric.

Although such buildings as the cathedrals of Orvieto and Siena have a clerestory with lean-to roofs to the aisles, no intimation of the real construction is derived from the façade, which is merely put up for the sake of effect; and, however beautiful it may be in natural colouring, sculpture and mosaic, must be looked upon from an architectural standpoint as untruthful. In the examples above quoted we find very steep-pitched gables in front of almost flat roofs, and when seen from the rear produce an effect by no means satisfactory.

Occasionally we find very low-pitched gables terminating a nearly square façade cut into three divisions by pilaster-like buttresses carrying insignificant pinnacles, whose long untapering forms are not connected by a single string-course,

and doorways, niches and windows all planted at random, except that a certain symmetry is maintained in their disposition, which does not assist in rendering it more mediæval in appearance.

The central western doorway of Orvieto Cathedral is a fine example of that rich and almost jewelled type of work characteristic of Italy, of which the campanile of Florence is the most famous example. The richness of the door-jambs with its alternating orders of spiral shafts, carving and inlay, is remarkable. On the other hand, the weaker qualities of Italian Gothic come out in such details as their secondary impostes, through which the archivolt mouldings appear to run, a detail the origin or significance of which it is difficult to understand, and which weakens the whole composition considerably. But it is, nevertheless, a sumptuous piece of decorative work carried out without stint as to cost or labour.

Another peculiar feature of the three western portals of Orvieto Cathedral is the manner in which the space above the much lower side ones and their Pointed arches is filled with windows whose simple unfoliated tracery ramifies from tall thin mullions. Translucent alabaster in lieu of glass fills these windows as well as those along the sides of the nave, the latter to about half their height.

The richly moulded arch of the central portal is semi-circular—an instance, though only one among many, of its retention by the Italians in the latter part of the thirteenth century. The tympanum here is occupied by a lovely sculptured group of two angels holding a canopy over a seated figure of the Madonna and Child, ascribed to Andrea Pisano and Maitani; while on the wall spaces between and on either side of the three doors are those celebrated reliefs, those complicated compositions with numerous figures on a small scale, as to whose origin critics have held various opinions.

(To be continued.)

MICRO-FUNGI THAT RUIN BUILDINGS.

DESCRIPTIONS have appeared in the journals representing the various trades of specific fungi (i.e. moulds and mildews) that so seriously affect pulp and paper, fibres and cloth, food, leather, &c., as to destroy a large part of their value. The present paper deals with the various kinds responsible for the breakdown of many portions of buildings. They are all powerful, though small, enemies to man's work, and by their insidious operations manage to circumvent his intentions.

St. Paul's Cathedral and many other important edifices have given anxiety to the authorities because of subsidences and cracks appearing in definite parts. Although reasons are assigned for such defects, it is possible that the original causes for their development can be attributed to the secretive actions of microscopic, or at any rate, dwarf fungi. At intervals they disintegrate particles in the structure, and by weakening the foundations, walls, and ceilings allow initially undiscernible collapses, which by repetition become obvious and dangerous. We all know how terrible dry rot has proved itself to be. In the same way there can be no doubt that the lesser-studied fungi also deserve deprecation in this direction.

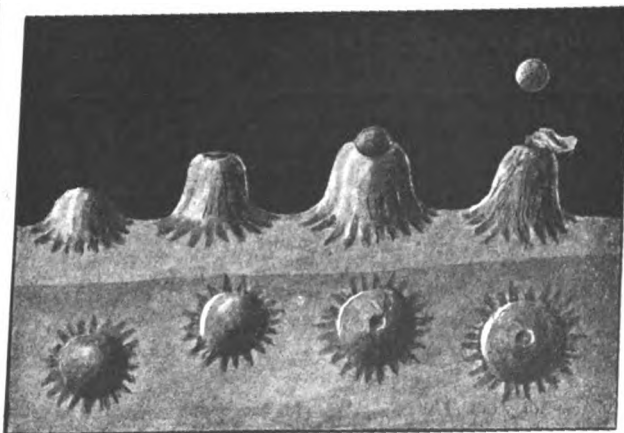
We illustrate herewith a few of the more prominent specimens of this pernicious group. These are found on the soil, in mortar and cement between bricks and stones, on ceilings, and on interior walls. They sometimes become exceptionally abundant round sinks, disfiguring the plaster, and are no doubt frequently dispersed therefrom throughout an establishment.

It does not follow that a building must necessarily have been attacked by them for a period as long as the age of such erections. An old house that has so far faced such dangers safely may become contaminated several years after it has been built, and then succumb little by little to the ravages of minute fungi.

On the other hand, a wholly new building may become a victim simply because the fungi happen to be present. Both new and old structures correspond with young and aged people in this respect, in so far that each class is more liable than "middle-aged" representatives to become affected.

The varieties depicted in fig. 1 never exceed $\frac{1}{4}$ inch in diameter, though they have several relations to be found in woods, on fences, &c., which are much larger than and different from them in several ways. We may find on damp walls scattered spots of the size mentioned, ranging in colour through a series including buff-white, yellow, honey-

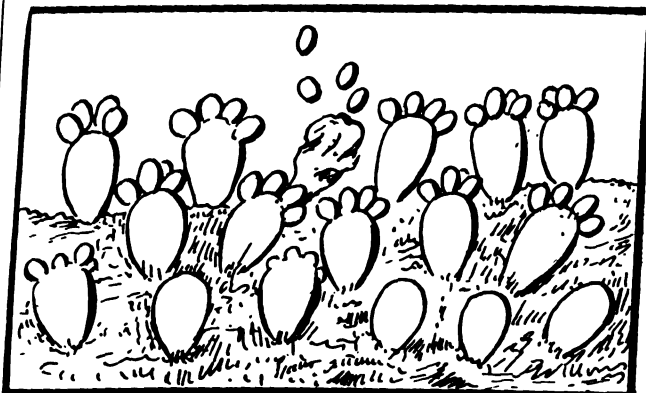
hued, and reddish. They begin as very small rounded elevations, which subsequently swell up to hemispherical shapes.



No. 1.—Magnified shot fungus; actual size only like pin's heads in diameter. The spore ball is suddenly ejected as shown.

Meantime they become crudely fringed at their bases. The name of this fungus is *Sphærobohus terrestris*.

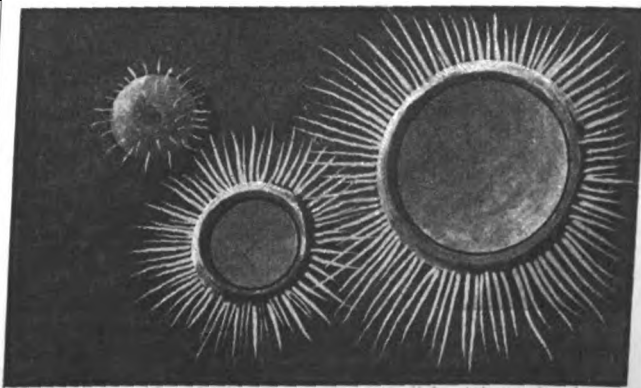
Its most remarkable feature is that it discharges a spore-ball after the manner of a cannon or mortar. At first the whole object is solid. Then the contents so modify themselves as to become a hollow case with a loose lining, united only by its top edge to the case. The lining encloses the spore ball. When ripe, a fungus of this kind suddenly turns its lining inside out, thereby forcibly ejecting the spore-ball, which is often carried to comparatively enormous distances. The spore-balls contain invisible conidia, or reproductive spores, which are released when the spore-ball comes into contact with a suitable environment. The conidia (spores) are set in fours on top of minute bladders, which are grouped together inside the ball. In fig. 2 the details



No. 2.—Tremendously magnified spores of the shot fungus.

are somewhat diagrammatic, as we can never magnify them so hugely as there shown.

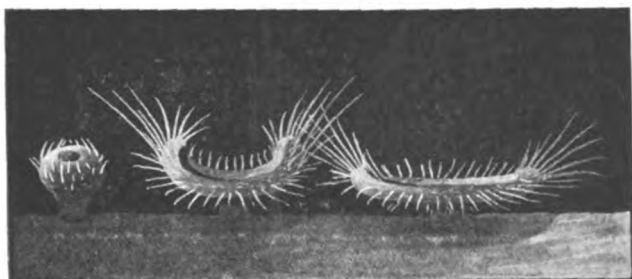
In fig. 3 are depicted specimens of *Lachnea scutellata*. They range in size from $1\frac{1}{2}$ to 4 millimetres in diameter, and



No. 3.—Top views (magnified) of the hedgehog disc fungus, which is only $1\frac{1}{2}$ —4 millimetres across when ripe.

begin as small knobs, which expand and open out as flat discs with densely hairy fringes. In colour they may be bright red, but when growing inside buildings they are

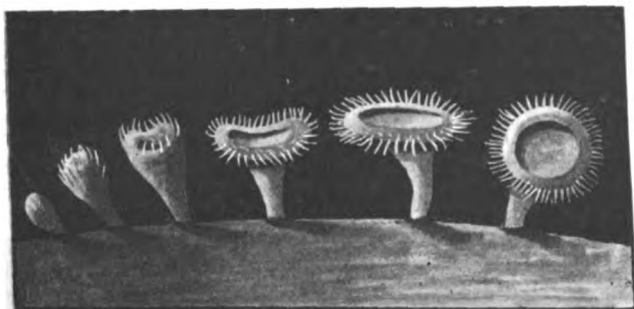
generally dull reddish or brownish. The surface layers of the disc are composed of a mass of tiny transparent sacs or cases (called *asci*), in each of which are eight spores, visible through the enclosing membrane or skin. These are set upright side by side in a compact collection, and are released by the shrivelling and decay of the fungus. In fig. 4 is



No. 4.—Side views of the hedgehog disc fungus, magnified. The actual diameter of the mature fungus is only about 4 millimetres.

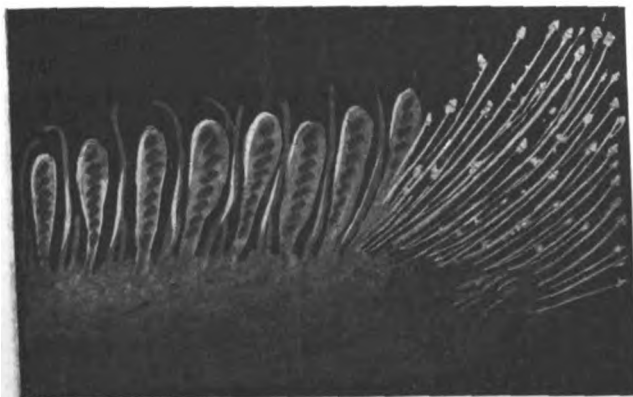
given a view of some of these sacs and the hairs of the fringe belonging to another species; but their arrangement will give an idea of what has been described.

Another somewhat similar, yet distinctive, specimen is shown in fig. 5. It is proportionally longer than that previously mentioned, and has a shorter fringe of hairs. Moreover, as it is snow-white, it is rather difficult to discern on



No. 5.—Showing how the bristle-funnel fungus develops. See No. 6 for internal details. Magnified: actual size, $\frac{3}{4}$ millimetre in diameter.

plaster, mortar, and cement. Its mature size is merely two-thirds of a millimetre, so that it is likely to escape attention in situations where it exists in thousands. It is named *Dasyscypha ciliaris*. Like the second one referred to, its disc is occupied by a group of clear-walled *asci* (sacs), each containing eight spores. In between these hairs are to be found shorter ones than those constituting the main part of the fringe, the latter of which usually bear at their summits minute yet perfectly symmetrical crystals of lime oxalate. Some idea of the reproductive arrangement is given in fig. 6.



No. 6.—Enormously magnified section of the bristle-funnel fungus; showing the transparent sacs containing eight spores apiece, and also the oxalate of lime crystal laden hairs.

It should be remembered that these visible objects are the fruits of the fungi. That is to say, they correspond with apples, oranges, pea-pods, and so on, in so far that they are the means by which the fungus in each instance reproduced and distributed. The damage is, however, due more

directly to the vegetative portions, which will now be briefly described.

When the spores are released they elongate into hollow or tubular threads, which branch and interlace with one another. These matings, or *mycelia* (as they are called) grow within the substance, instead of simply on its surface. It is true that in some cases the threads run along or get erected into tufts above the substance, but these filaments are generally spore-carrying or germinative.

It is because of the ramifications of the *hyphae*, or filaments, that the foundations, ceilings, or walls are slowly disintegrated. The filaments, by extracting nutriment for their own sustenance from their surroundings, exhaust the latter of some ingredients, and, therefore, hasten irregular decomposition, with the result that weakness is set up, and this is hastened as a matter of simple mechanical rearrangement of the parts. Fractures several feet long may be traced to the doings of a number of minute fungi of the kind illustrated.

Of course, when once the fungi have obtained a good start their reproduction increases at a rapid rate, and the danger is intensified.

As to the different ways in which spores get distributed, these are so numerous that only a brief outline can be given of them. The wind, rain, water currents, clothing, boots, animals, roof leakages, gutters, implements—these comprise a few of the means by which the invisible spores are conveyed. Granting that a few of the spores settle upon a moist spot, or in an accidentally inflicted crevice, they will not be long before they exert their evil sway.

Although in some forms lime is deleterious to fungi, it is, as a rule, a very excellent food for a large number of specimens. Acids generated by the operations of the fungi combine with the lime to make various calcic salts, and these, by decomposing, cause other modifications which materially affect the structures holding them.

We hear much concerning the effect of bacteria or germs, yet the actions of the latter are, in the majority of cases, secondary or supplementary to the misdeeds of the fungi. The bacteria are, however, better adapted to germination and observation in test tubes; hence their attraction for so many scientists.

So far as the writer is aware, these obnoxious, though curious, fungi have been ignored as belonging only to old and wretched buildings or to utterly neglected ones; yet it will almost certainly be found that many new erections become contaminated prematurely by their presence.

Agricultural science has enabled plant cultivators to save thousands upon thousands of pounds, as a result of making a systematic study of injurious fungi and applying the knowledge in a practical direction. There is no reason why building substances, stones, and so on should not be antiseptically treated, just as are fruit and timber trees, which are repeatedly sprayed, so that they may be cleansed of fungi and so rendered immune to successive onslaughts of the enemy.

It is difficult to see why something should not be done on the same lines on behalf of architecture. At any rate, to know the appearance and habits of an enemy is to ensure better safeguards to property.

UNIVERSITY INTELLIGENCE.

In connection with the opening of the session at University College, London, the Provost, the Deans, and Vice-Deans of the Faculties of Arts, Laws, Science and Engineering will attend from 10 A.M. to 1 P.M. on Monday, September 30, and Tuesday, October 1, for the purpose of giving advice and information to students entering the college.

Among the public lectures that have been arranged is one by Mr. W. H. Ward, M.A., F.R.I.B.A., on "The French Renaissance in Architecture," to be delivered on Thursday, October 10, at 6 P.M., when Mr. Spencer W. Morris, Master of the Worshipful Company of Carpenters, will preside.

ILLUSTRATIONS.

1 GREEK STREET, SOHO.

AMONGST the many little-known interiors which abound in London houses is the subject of our illustrations, which we present for their intrinsic value as examples of detail.

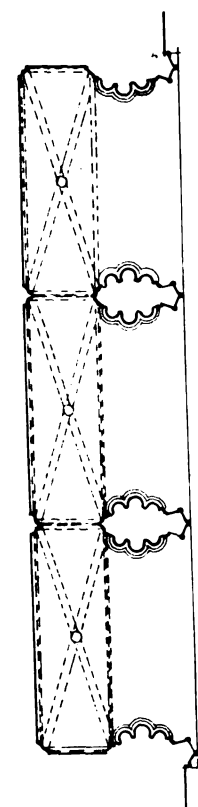
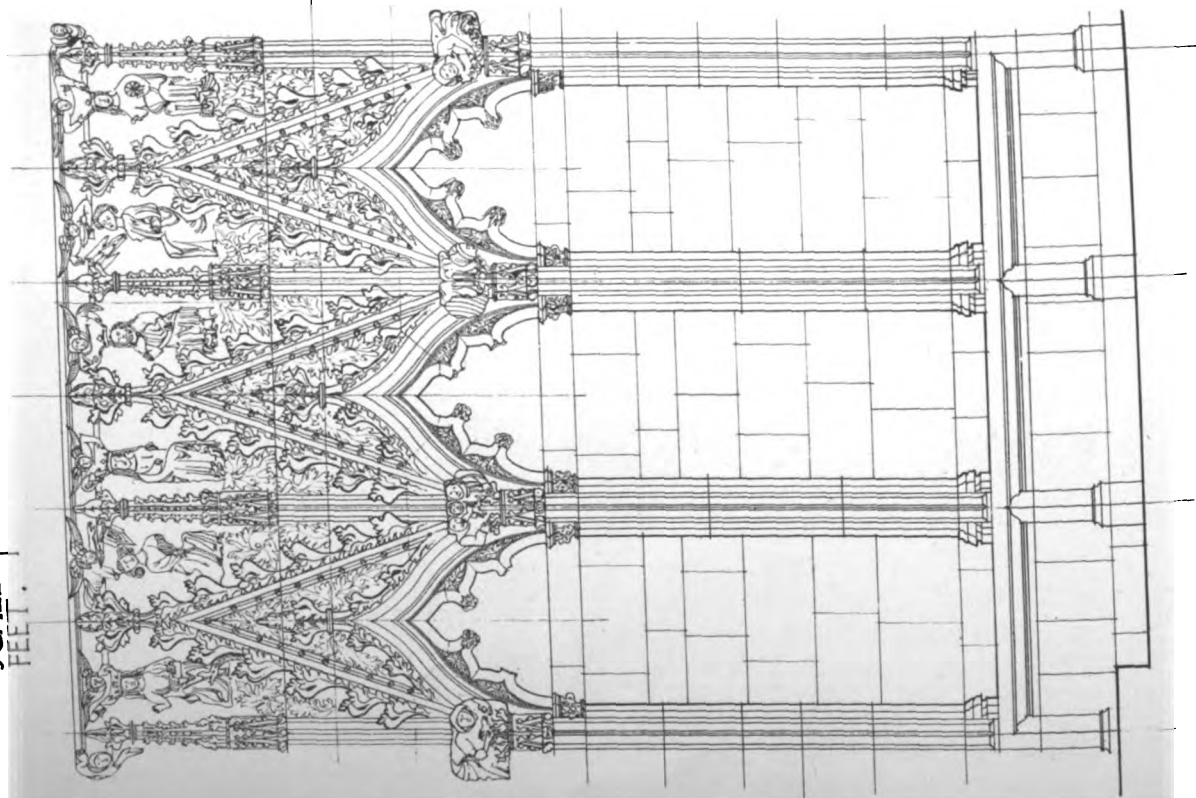
SEDILIA, ST. ANDREW, HECKINGTON.

THE drawings by "Avec beaucoup de Peur," which we reproduce, were awarded a prize in the monthly competitions of *The Architect Students' Sketching and Measuring Club*. Some short notes on the church are included on the drawings.

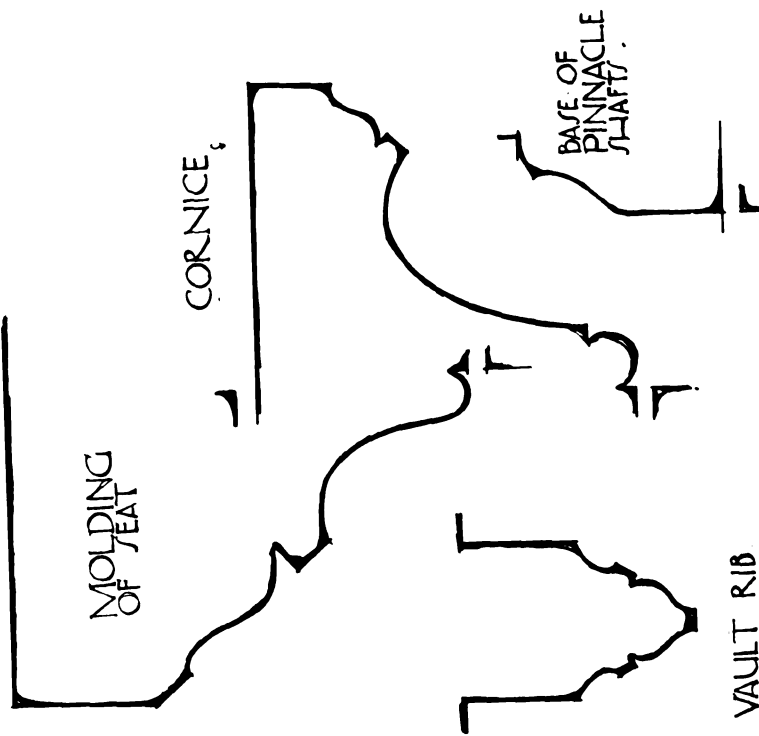
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THE SEDILIA S. ANDREW HECKINGTON. Lincs.



PLAN.



SECTION.

MOLDING
OF SEAT

CORNICE

BASE OF
PINNACLE
SHAFT

VAULT RIB

MANUSCRIPT DRAWN BY
AVEC BEAUCOUP
DE PEUR. 1860

PHOTO LITHO SPENCER & CO. LTD. 89 & 90 DEAN STREET, SOHO, W.

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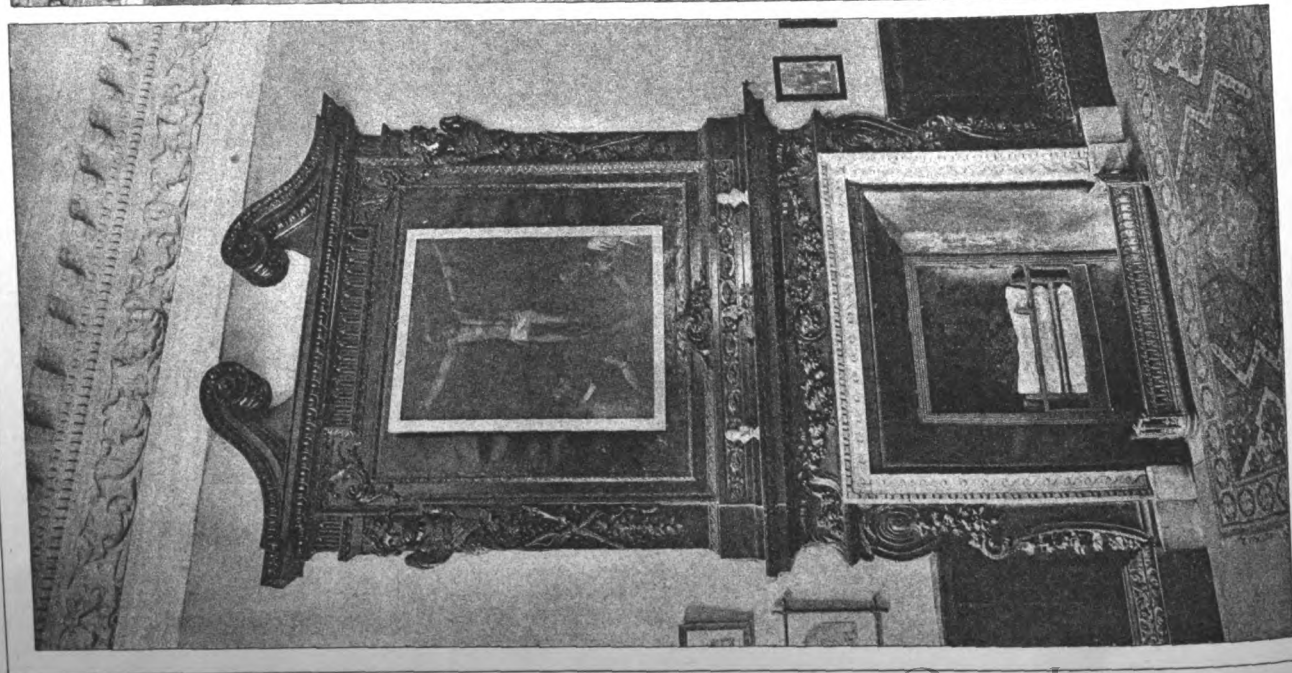
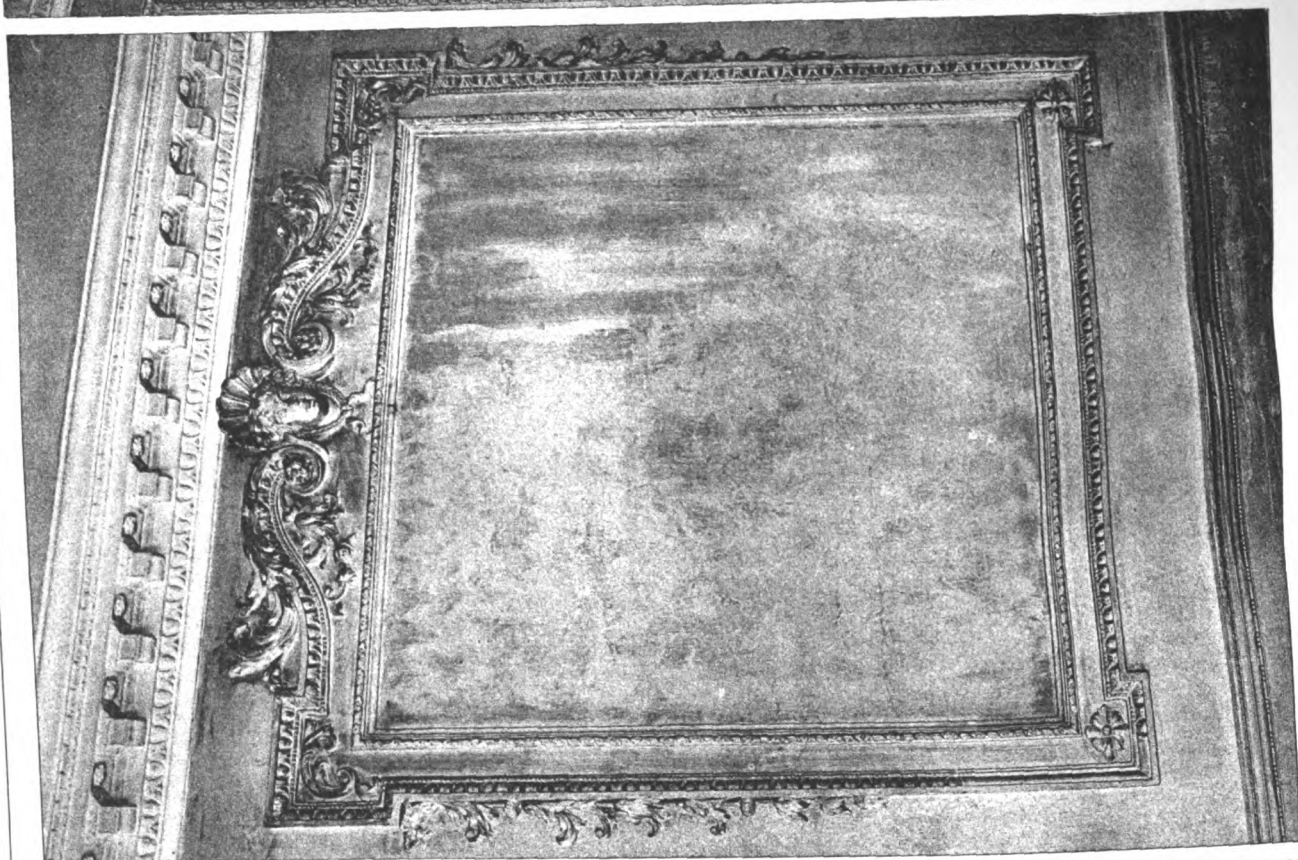
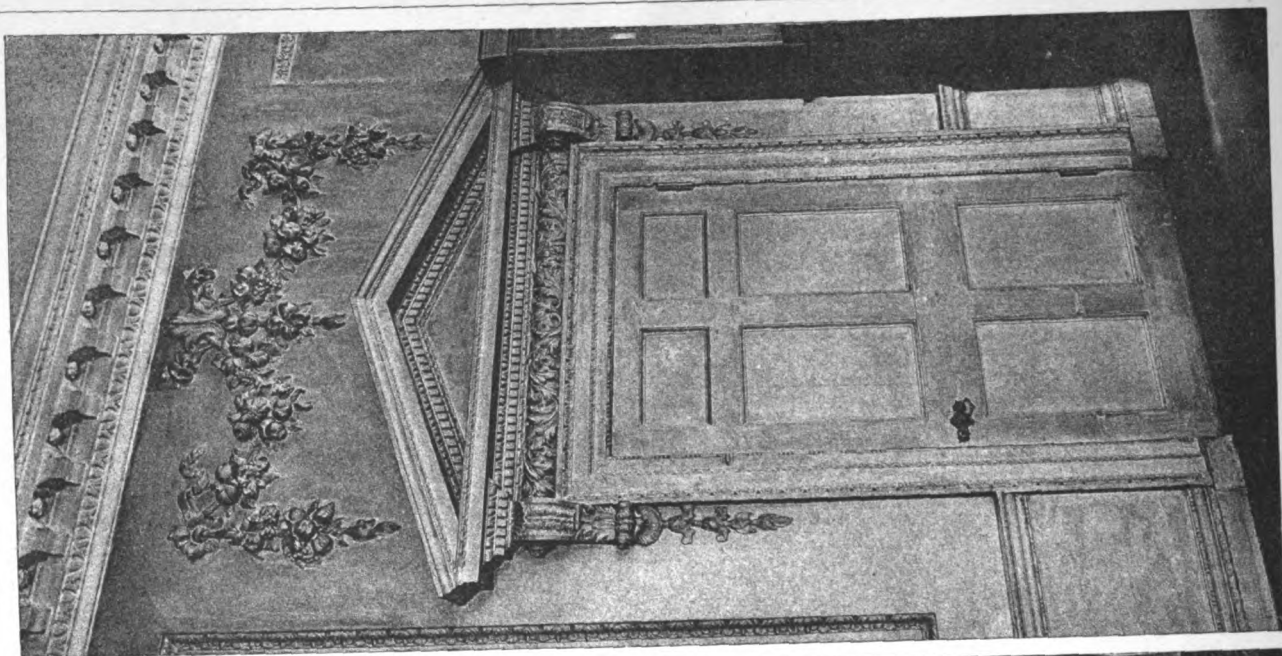
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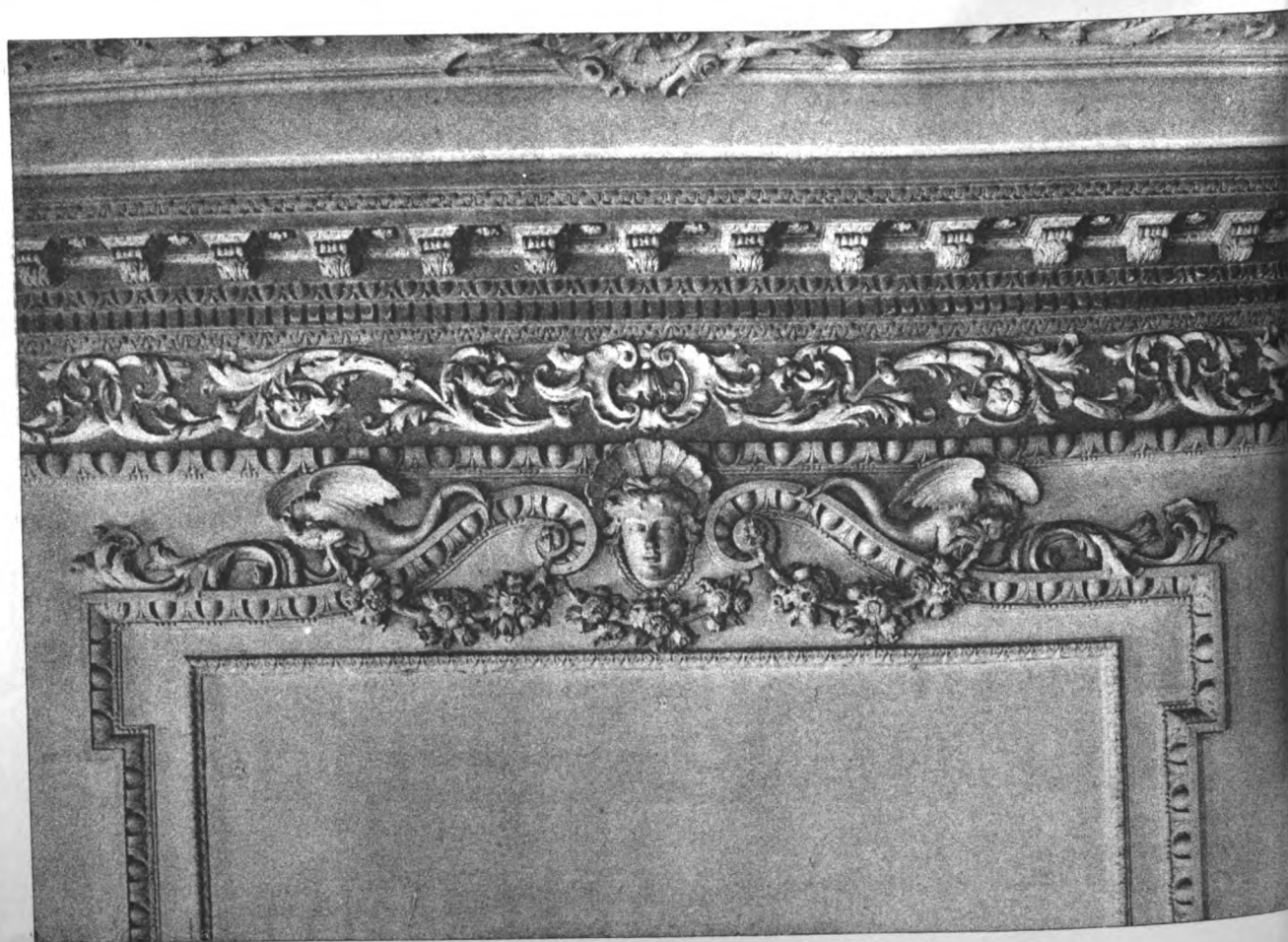
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The Architect, Sept. 20th 1912



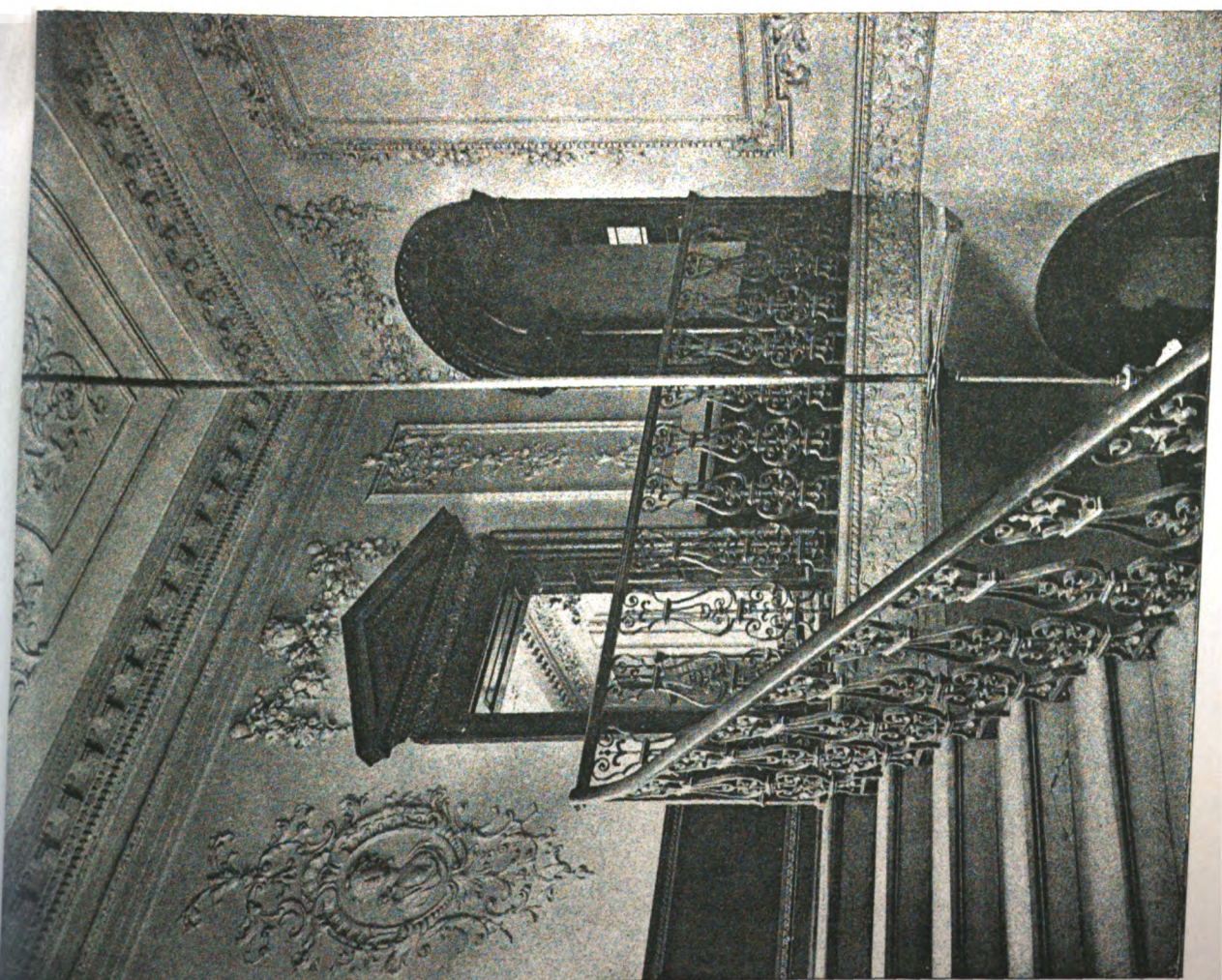




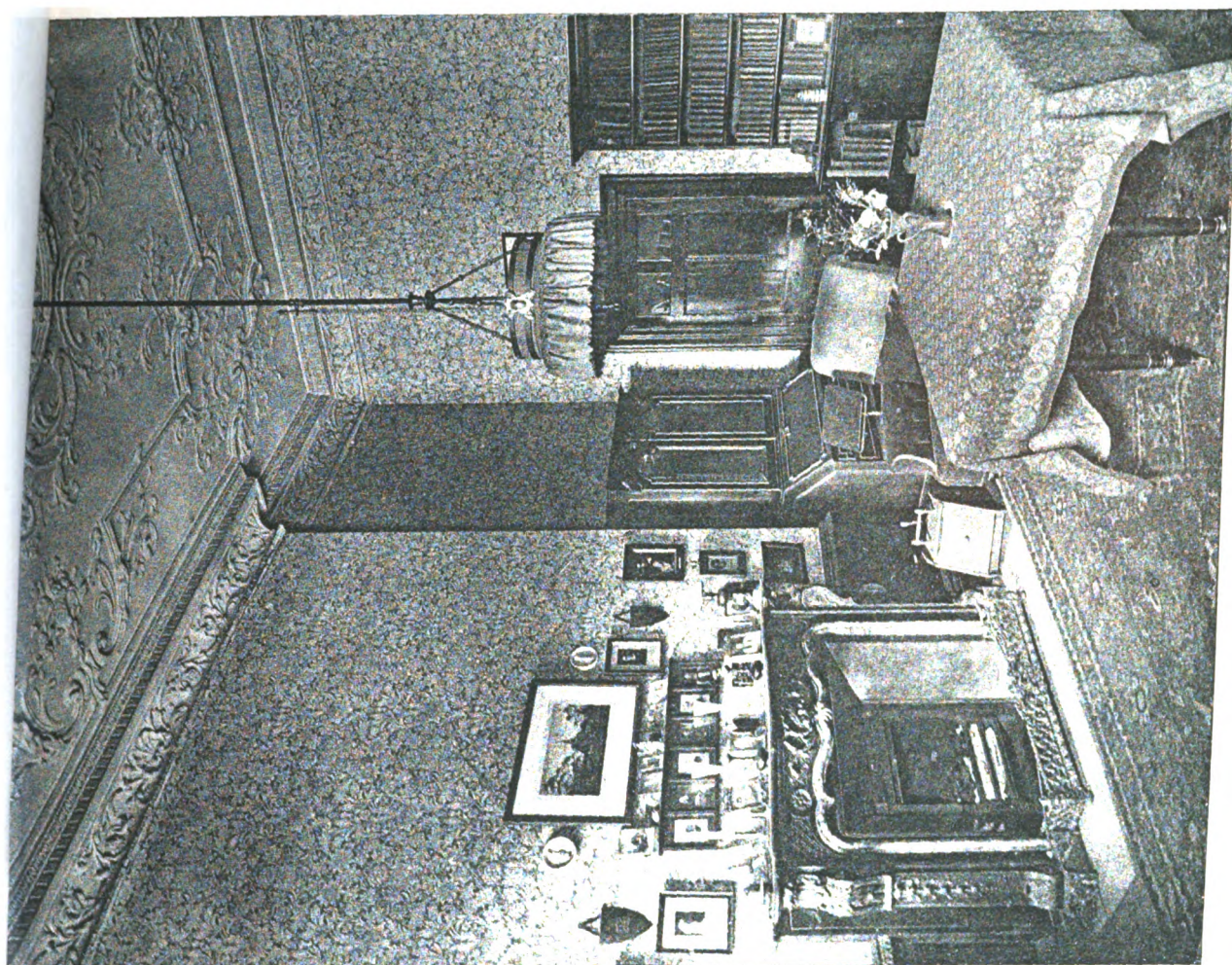
PHOTOS BY H. L. WARHAM, 90, SINCLAIR ROAD, W.







PHOTOS BY R. L. WARMAN, 90, SINCLAIR ROAD, W.



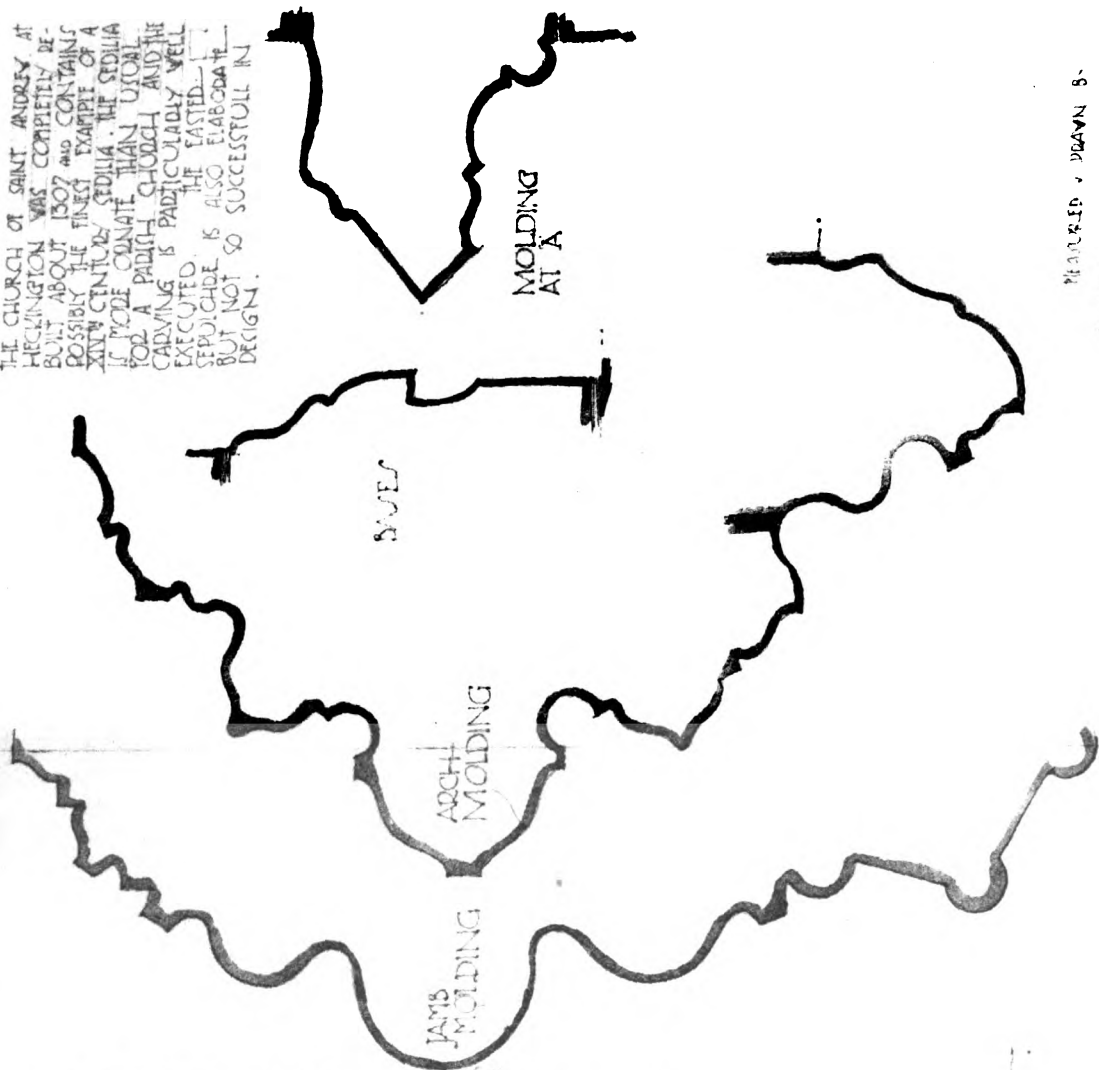
INK PHOTO SPRAGUE & CO. 1965 & 70, DEAN STREET, SOHO, W.

DETAILS OF INTERIOR, NO. 1 GREEK STREET, SOHO.

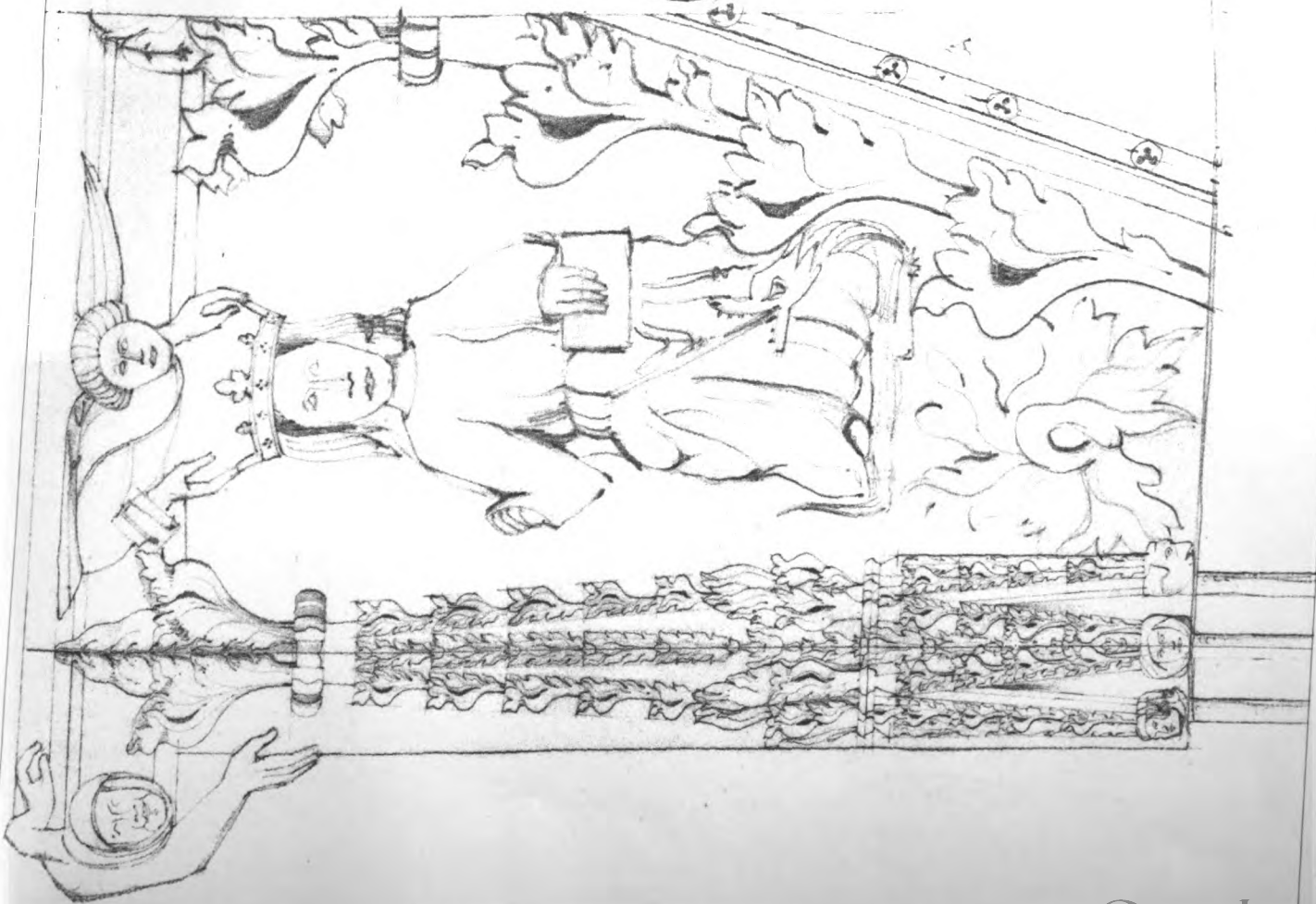


THE SEDILIA SANDREW HECKINGTON

THE CHURCH OF SAINT ANDREW AT
HECKINGTON WAS COMPLETELY RE-
BUILT ABOUT 1307 AND CONTAINS
POSSIBLY THE FINEST EXAMPLE OF A
XIV CENTURY SEDILIA. THE SEDILIA
IS MORE COMBINE THAN USUAL
FOR A PARISH CHURCH AND THE
CARVING IS PARTICULARLY WELL
EXECUTED. THE EASTED-
SEPOLCHRE IS ALSO ELABORATE
BUT NOT SO SUCCESSFUL IN
DESIGN.



MEASURED & DRAWN BY
AVEC BEAUCOUP DE
DE PEUR. March 1912.



"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.
Prize Drawing by "AVEC BEAUCOUP DE PEUR."



INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—II.

(Continued from last week.)

A HOUSE until recently existing in Love Lane, Billingsgate, and facing a square courtyard on the principal side, is said to have been inhabited by Wren. Most of the panelling and ceilings capable of being removed have been incorporated in the new school building of Sir John Cass' foundation.

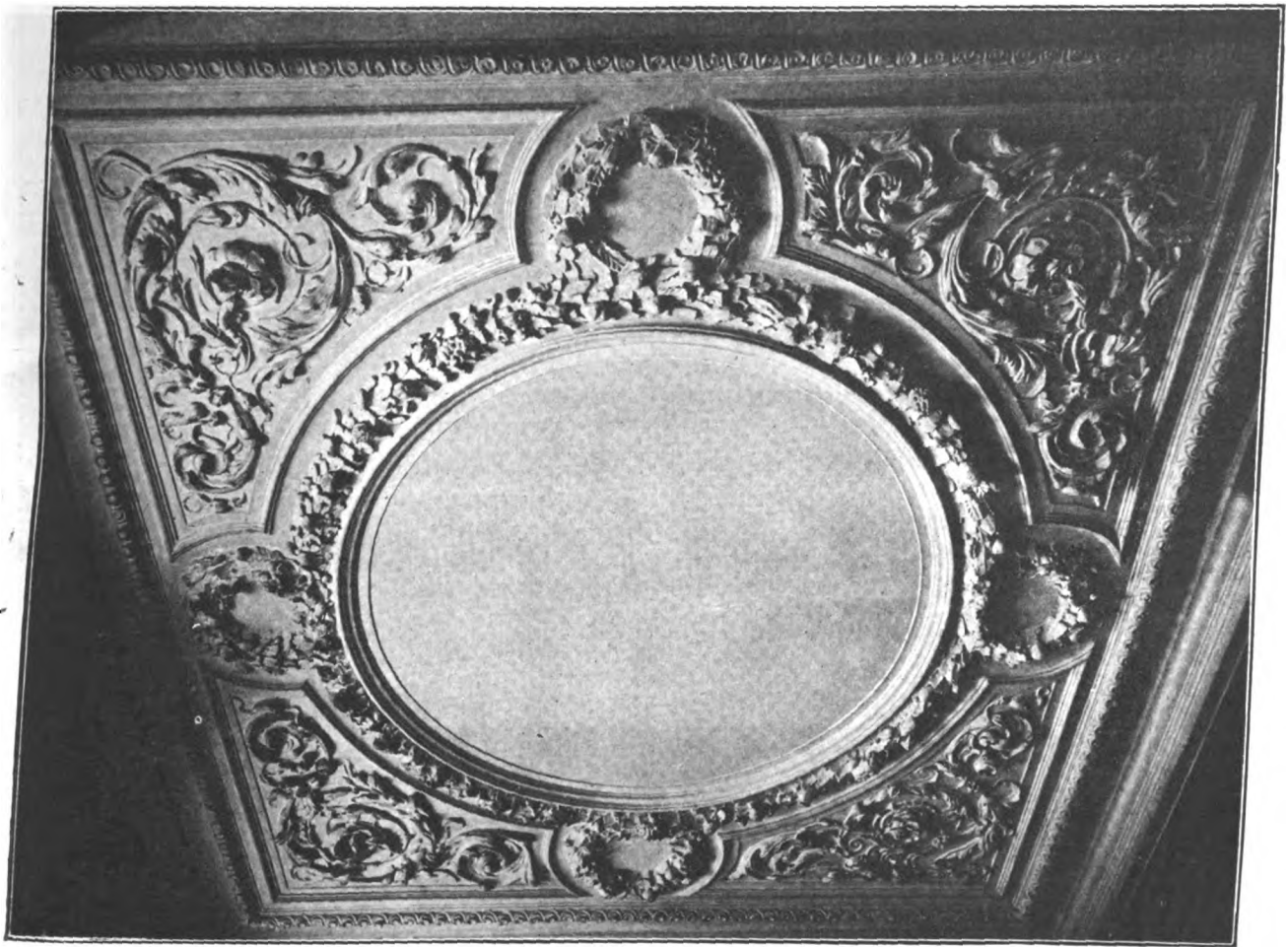
A ceiling from one of the ground floor rooms is shown in the accompanying photograph, which was taken subsequent to the removal of the cornice. The whole house was in one style, of about late William III. period.

There are several other very interesting ceilings extant, dating from about this time, which are worthy of mention. The first is that contained in the church of King Charles the Martyr, at Tunbridge Wells, within the parish of Tonbridge, and is said to have been the first church built within that town, being formerly known as the "Old Chapel." It

whitened over for the convenience of the commercial use to which the room is now relegated. The frieze contains numerous shields bearing the arms of royalty and many celebrated west country families, painted by Stannaway.

The ceilings of Holyrood Palace are of exceptional character, especially those to the morning-room and the main staircase.

John Mylne, the master-mason, had prepared a plan for altering the Palace in 1663, which was carried out by his nephew, Robert Mylne, in 1671. The latter was associated with Sir William Bruce in the decorative works, and the names of many assistants are preserved in the Scottish records, notably the two English plasterers, John Halbert and George Dunserfield, who were the authors of the ceilings referred to, which they modelled between 1674-9. Unicorns in very full relief figure in the scheme of the morning-room ceiling, and large female figures occupy the angles of the staircase ceiling. The timber for wainscoting was imported from Rotterdam, two Dutchmen being engaged on the work of painting and carving. Jacob de Wett was employed to represent in colour many ancient worthies, and as a side issue expended his skill in faking marbling to



CEILING FROM AN OLD HOUSE IN LOVE LANE.

was opened in 1684; the ceiling is formed by means of a series of panels with circular mouldings, some of which are coved in a semi-spherical form, the mouldings being enriched with modelled ornament, fruit, and flowers, and having four cherubs' heads applied to the spandril-shaped panels formed by the intersection of the circular ribs. The ceiling does not centre with the present chancel, probably owing to a subsequent widening of the nave and a corresponding alteration in the position of the chancel to balance the galleries. The most recent alterations were carried out under the directions of the late Mr. Ewan Christian.

The Custom House, Exeter, had a good Charles II. ceiling in the Long Room on the first floor, erected in 1681, now however, allowed to go to decay. That city contains a better example of rather later date in the room known as the "Apollo Room" in the Old Merchants' Hall, now used as a millinery showroom.

This ceiling was added in 1695, subsequent to the visit there of Cosmo, Duke of Tuscany, in 1669. The oak panelling to the walls is very boldly moulded, but, unfortunately, lime-

chimneypieces, for which work he received an increased allowance, while Jan Vansantvoort carved much of the woodwork in the principal State rooms.

The chapel of Farnham Castle, Surrey, contains some good Charles II. work in the wood carving of the wainscoting, overdoors, &c., with a plentiful supply of angelic heads. The work was carried out between 1662 and 1684 for George Morley, Bishop of Winchester, who probably employed John Webb on the earlier portion, judging from the material used and the general characteristics of the work. Some of the modelled work to panelling is in composition as adopted at Wilton; there is also some good carving on oak over the door and to the chimneypiece in the hall, with some pine or limewood carving on oak panels and styles in the chapel.

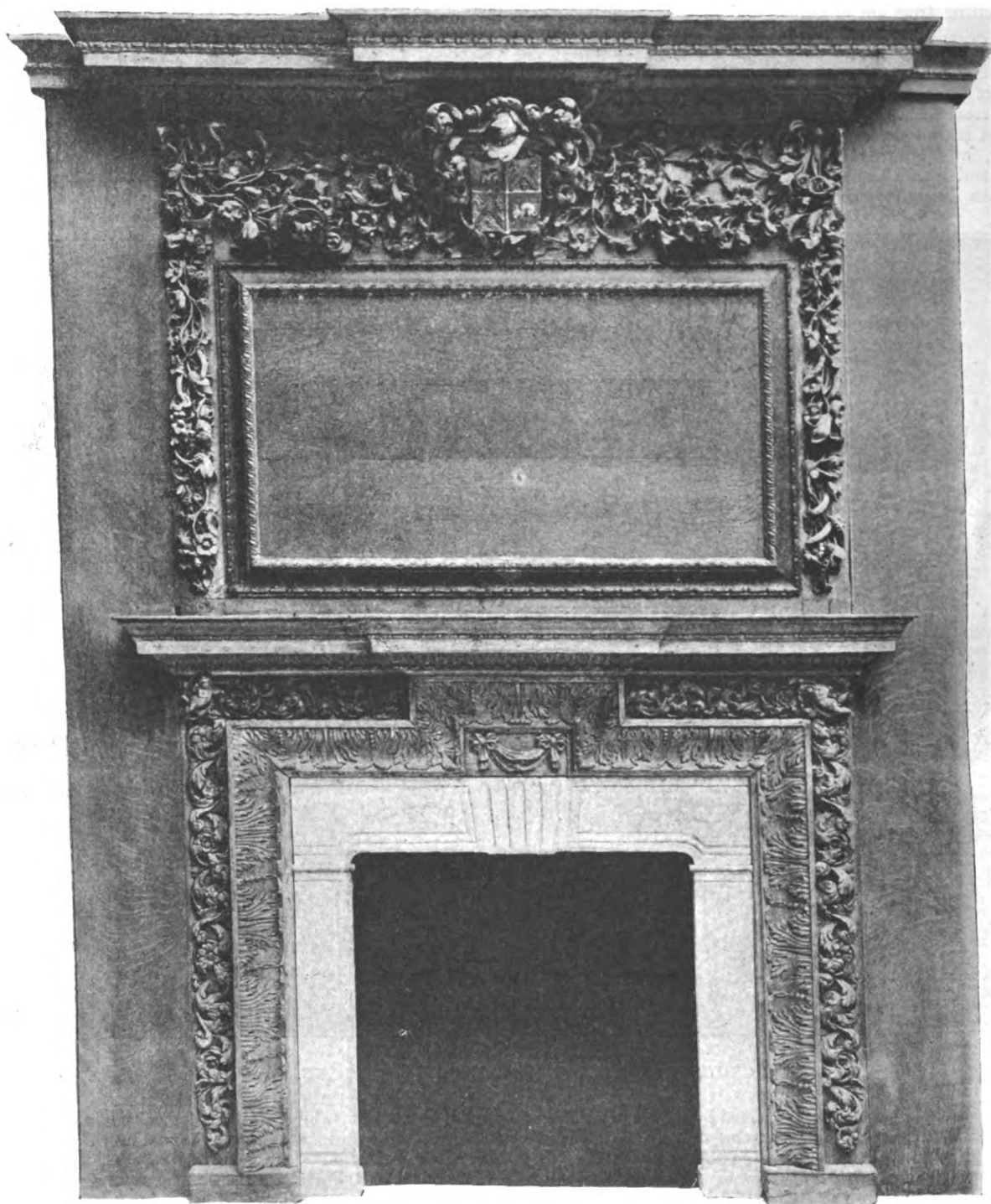
Badminton House, Gloucestershire, was practically rebuilt by Lord Herbert, Duke of Beaufort, in 1682. His ancestor, Henry Beaufort, Duke of Somerset, was the great grandson of John of Gaunt.

The Oak room is a Jacobean work transferred from Troy

House, where it had in turn been adapted from the remains of Raglan Castle, Monmouthshire. The carved chimney-piece is an exceedingly elaborate, rather laboured, example of the period, but withal a fine piece of work. The dining-room is a grand saloon, with lofty fluted composite columns supporting a modillioned and consoled entablature. The overmantel is carved in the Grinling Gibbons' manner, as is also the overdoor and sundry panels, which are carved with representations of dead game, fruit, and flowers in a finish which indicates the hand of a master carver.

equally refined chimneypiece at Rushton Hall. The caduceus, the French emblem of commerce, decorates the hobs of the drawing-room grate, and was a favourite feature with nineteenth-century architects, as Sir Robert Taylor and Sir John Soane.

Like most mansions which have received alterations in succeeding generations, Badminton House possesses a Chinese room, a style which appeals very little to modern taste, the trellis pattern work being more suitable to garden architecture.



FIREPLACE AND OVERMANTEL, FROM CLIFFORD'S INN, LONDON.

William Kent made considerable additions to the house in 1740, and designed Worcester Lodge, where a ceiling of his exists. A chimneypiece by him, formerly in the lodge, is now fixed in the east room; it contains his usual consoles, with the triple husks, which have been referred to earlier as indicating a means of identifying the author.

The hall is a stately room finished in white with amorini crowning the pediments of the doors from the chisel of Rysbrack.

The large drawing-room contains an exceptionally delicately carved chimneypiece of the English Empire style of the time of Flaxman, who was probably the sculptor of the

The Hall and Governors' room of Chelsea Hospital occupied the attention of Sir Christopher Wren for some ten years from 1682. The chapel is formed with a barrel vaulted ceiling with enriched panel mouldings and long carved panels at the springing to each bay. The semi-circular headed windows below are flanked by an order with a cartouche affixed to the spandrels of a character similar to those adopted later by James Gibbs in a similar position in the Radcliffe Library, Oxford.

The wainscoting is of late Charles II. design, with fielded panels, leaf-carved capping and cherub heads to the pilasters. The whole forms a simple yet decorative scheme.



PANELLING REMOVED FROM CLIFFORD'S INN, LONDON.

No. 3 Clifford's Inn, formerly the residence of John Penhallow, affords a particularly pleasing example of the period of James II. The room illustrated in the accompanying photographs is now in the woodwork section of the Victoria and Albert Museum, South Kensington. The carving gains considerably in effect from being limited in its application to distinct portions of the room, as the door-heads, architraves and fireplace. The details give a good idea of the nature of the carving, which is mostly executed in cedar and applied, the panelling generally being in oak. The Penhallow arms, quartering Penwarin, are carved on the shield over the mantel; the marble architrave is later. The size of the room is 18 feet long by 14 feet 10 inches wide and 9 feet 10 inches high.

The panels are raised from the styles in the manner usually adopted at this time, with bolection mouldings acting in the reverse way to the panelling of the beginning of the century. The composition of the carving to the overmantel consists of an interlaced design of flowers, fruit and leaves,

and below the mantel board at the extreme angles will be noticed two small amorini. The main cornice and the architrave to the fireplace are both carved with the acanthus-leaf ornament of the Corinthian capital origin on an ogee moulding. The angel corbel in the door-head and the linen festoon in the panel of the fireplace architrave are features of note. The room dates from 1686-8.

(To be continued.)

TINTERN ABBEY.

THE following works relative to the preservation of the structure have been undertaken during the year 1911-12 by the Commissioners of Woods and Forests, as stated in their annual report:—

West Front.—The scaffolds erected in 1911 for the examination only of the great west window and the west front generally, in order that a report and estimate of the repairs necessary might be prepared, were subsequently strengthened and added to, and the whole front has been cleared of ivy and other growths which were damaging the structure; the stonework of the gable and walling generally has been secured and the gable protected and pointed with cement; the stonework of the large window was found to be in a very dilapidated condition, some of the mullions much bent and out of perpendicular, cracked and shaled, and burst with the iron bars fixed therein, parts of the tracery had fallen out, and a great deal of the moulded and curved work was split vertically, being in many instances "face bedded," and large pieces of the heavily moulded stonework have fallen away.

Saddle bars of copper, instead of iron, have been introduced between the mullions in suitable positions to steady them; the tracery has been secured, where necessary, with copper clips and bands, all points where water could lodge have been carefully filled in, and the whole has been grouted and pointed. The south-west buttress has been reset to a sufficient height to meet and strengthen the broken and dangerous part of the south side of the gable; the north-west buttress has still to be pointed.

Clerestory, South Side of Nave.—The whole of this clerestory is in a bad state, but those parts above the two western bays of the nave appeared to be the worst. A scaffold has been erected, and on examination the work proves to be in a dangerous condition—a serious settlement has at some time taken place, and there is a large crack up through one of the arches and to the window and work above, the sill and head of the clerestory window being completely dislocated, and of the wall above part leans to the north and part to the south, and being 1 ft. 10 in. out of upright in the total height.

To secure this without undue risk it will be necessary to erect very strong shores and centres to prevent movement in either direction.

A scheme has been prepared for this, and the work will be started directly the season is sufficiently far advanced to allow of it.

Infirmary, &c.—Some further repairs, protection and pointing have been done to the walls, also to those of buildings on the west front and other parts of the Abbey.

The number of visitors in the year to December 31, 1911, was 17,957, as compared with 17,542 in the previous year.

SOME NOTABLE BRITISH TESTS REGARDING THE STRENGTH OF REINFORCED CONCRETE.*

THE journal *Concrete and Constructional Engineering* has at my request collected particulars regarding a number of tests carried out in Great Britain as to reinforced concrete. These particulars were summarised under my supervision and published from time to time as a series of articles. I endeavoured to have this collection made exhaustive, but there were, naturally, a few experiments of which particulars could not be obtained, owing to their having been conducted by private persons who do not seem inclined to divulge the information. The data were on that occasion presented with little comment, it being thought desirable to place the facts on record in a simple way, so that the reader could draw his own conclusions if he so desired, but as a recapitulation of the results obtained is impossible in a short report such as this one, I think a useful purpose will be served by here indicating the more notable tests and the lessons I hold they taught, so that the members of the International Testing

* Some notes by Edwin O. Sachs, F.R.S. Ed., London, presented at the New York International Congress on the Testing of Materials.

Association may obtain some idea of the nature of the work done in the British Isles.

That very little has been done in this country in the way of research work regarding reinforced concrete is, of course, well known. We cannot aspire to having any leading position in this direction, except in respect to the question of fire resistance, which does not quite come within the scope of this report. What little has been done is due to private enterprise alone, and there has been no effort to guide these private workers, so that their efforts could be properly collated, compared and eventually form part of some general scheme of investigation. The private individuals and firms, however, who have undertaken tests deserve commendation, for they have performed a service to the community, and particularly to the engineering and architectural professions, which we had no right to expect. Our public institutions, who should have assisted in experimental work, have, unfortunately, been very remiss, for there is practically nothing to place beside the elaborate and highly commendable researches carried out by engineering professors in public laboratories in the United States, Germany and France. Even our Colonies have done something in this direction, though the Mother Country has omitted to do anything. The only exception, as indicated above, that stands to our credit are the official tests carried out upon the fire-resistance of special systems of reinforced concrete construction conducted by the British Fire Prevention Committee. These tests are especially noteworthy, as very little has been done elsewhere in this direction, the United States being practically the only other country that has carried out any systematic series of such experiments. It is to be hoped that the results of modern investigation in this direction may also some day be recorded for the benefit of the Association.

Firstly, I would remind the members of the Association of some early tests carried out in England from 1870 to 1876 by Mr. D. Kirkaldy and Mr. Thaddeus Hyatt. They demonstrated the value of anchoring the ends of bars in flat slabs because it was evident that the adhesion failed in certain cases. They also proved the value of fixed stirrups or vertical members in concrete beams, though, due to the load being applied centrally, the value of these vertical members was more in the direction of a mechanical anchorage to the main tension member than in resisting diagonal tension.

The next experiment, namely, one by Mr. Frederick George Edwards, carried out by Mr. D. Kirkaldy in 1891, also showed the advantage of anchorage to the ends of bars, and that the smaller the reinforcement the less need was there for the anchorage, because the perimeter of the smaller bars as compared with larger bars was greater.

In 1893 or 1894 another experiment was carried out for Mr. Edwards, which showed that beams could be satisfactorily constructed with diagonal members with holes through the webs.

The tests by Stuart's Granolithic Company in 1893 and 1894 showed some remarkable results with flat slabs heavily reinforced, and can only be explained on the assumption that the stress strain curb on the concrete was more than a parabola, being almost rectangular.

The tests by Sir John Fowler and Sir Benjamin Baker in 1896 on slabs reinforced with expanded metal also showed remarkable resistance, but insufficient data regarding the strength of the concrete precludes us from drawing any special conclusions therefrom; the same remark applies to the tests by Mr. James Mansergh in 1898, and by the Northern Architectural Association and others in 1899 on slabs also reinforced with expanded metal. The test by Mr. A. T. Walmisley, Mr. J. P. Allen and Mr. A. H. Morton in 1903 was on a large span flat slab, but nothing much can be gained from it except that the ordinary methods of calculation are satisfactory.

Other tests which we published might be examined in detail to show the application of the formulæ in practice, and the factor of safety obtained from the ordinary assumptions, but they contained no special lessons.

Messrs. Hodkin and Jones in 1905 proved how the resistance of a concrete floor was materially increased by the insertion of corrugated bars of some depth extending well up into the floor, and at the same time it was shown how the resistance of ordinary rolled steel joists was increased by the concrete surrounding them in a floor of the old-fashioned type.

The tests on the Herbst tubular floor constructed by the Armoured Tubular Flooring Co., Ltd., and conducted by the British Fire Prevention Committee in 1907, showed that there was ample resistance, when carefully constructed, in such floors of moulded ribs and moulded filling pieces which serve as permanent centres for a topping of concrete, such floors

being in reality of T-beam construction with a suspended level ceiling.

The test by Messrs. D. Kirkaldy & Son in 1907 on a column reinforced only with Kahn bars showed that the inclined ribs of the Kahn bar bent inwards to the centre of the column afforded considerable increase of resistance. The test by the same firm of some arched roof trusses at Hammer-smith Baths reinforced with Kahn bars, though it is difficult to draw any detailed conclusions therefrom, proves the strength of such a structure in reinforced concrete.

Some tests on the Kleine hollow brick and concrete floor with flat bar reinforcements embedded in mortar in the joints between the bricks proved that concrete below the neutral axis in an ordinary floor is in large part ineffective, and showed that a floor of that type becomes practically a series of T-beams, and that the mortar seemed to adhere strongly to the bricks, and the webs of the T-beam construction are consequently stout enough to resist the shear or diagonal tension stresses.

The tests by Mr. Blackadder substantiated the adequacy of the ordinary method of calculating rectangular beams in reinforced concrete; those built with shear rods, however, do not show very remarkable results, possibly because of the form of the shear members which were inclined but not rigidly attached to the main bar and possibly because of the manner of loading and of the form of the test pieces.

The tests conducted by Messrs. D. Kirkaldy & Son in 1902 for Messrs. A. E. Williams are interesting as being in respect to doubly reinforced rectangular beams.

The tests on columns for H.M. Office of Works, which were also conducted by Messrs. D. Kirkaldy & Son, show that the ordinary formulæ fit the conditions of practice well. It was an interesting fact the columns broke near one end, and an explanation of this is needed.

The test on hooped columns which was carried out some years ago for Mr. William Dunn agreed generally with the results obtained by Professor Talbot, considerable deformation resulting before the hooping apparently came into play, and this was recently criticised as resulting in the concrete being overstressed in the early stages and the column deformed before the hooping proved effective, which it eventually did, in increasing the ultimate resistance of the column. The inference drawn was that the strength of the column which could be worked upon in practice was merely that of plain concrete, and though correct for a column so made was not applicable to columns in which a spiral binding was used together with a fair amount of vertical rods, which combination has been shown by other tests not to have considerable deformation in the early stages of loading, this meaning that the concrete was not overstressed, and such columns have greater resistance than plain concrete.

Various other minor tests went to show, in a general way, the uniformity and general reliability of reinforced concrete, even if they do not add much to our knowledge of theory, or if they cannot be considered as sufficiently detailed to be of scientific value.

The amount of research work which has been done in this country is, however, as indicated above, very small, and it is to be greatly regretted that England, who was the mother of several of the earliest inventors, and in particular of Mr. W. B. Wilkinson, who should be called the real inventor of reinforced concrete as a method of building construction, should be so behind other countries in the investigation of the subject.

It is probably the unscientific manner in which we went about the investigation of reinforced concrete that led to it being undeveloped here and first exploited abroad, and finally returning to us when it was regarded as a foreign system. This is too often the tale of invention in England, and our engineering institutions and our professors of engineering have nothing to compliment themselves upon. At the present time we are, in fact—except in respect to the matter of fire resistance—very much behind all the other great nations in our tests on structural materials and systems of construction, which are few and far between, and are only executed on a small scale.

It seems almost hopeless to expect our Government or our engineering colleges—where so often lack of interest or understanding of such problems has been shown—to now pay any attention to the matter, so that we can only hope for the efforts of private bodies, such as the professional societies intimately concerned.

Should this slight contribution to the subject by its poverty compared with the contributions from other countries assist in an awakening of my colleagues at home as to the necessity of systematic research work, then these lines will not have been written in vain.

THE ARCHITECTURE OF LONDON HIGHWAYS.

By VIATOR.

IN THE HEART OF THE OLD CITY.

It was somewhat difficult to find the fitting sub-title to this article; but the above selection will perhaps best serve the purpose, though consideration will be for the most part confined to those two important thoroughfares lying respectively between the Mansion House and Blackfriars Bridge and between King William Street and Ludgate Circus.

And these two thoroughfares have very different histories; for, whereas Ludgate Hill, St. Paul's Churchyard and Cannon Street are old—almost classic ground in the story of London—Queen Victoria Street is of the nineteenth century, having been driven through a number of small streets in the ill-considered fashion of the town-misplanners of mid-Victorian days.

Consequently, we should not expect to find any old buildings in this latter thoroughfare, and as a fact their number is very limited.

But is the modern work much to boast of in this street? It must be confessed that the breadth of the street gives a feeling of satisfaction, though even this would probably not appeal to those acquainted with other European capitals. But here the broad satisfaction ends; for, though various individual blocks of building are commendable, the *tout-ensemble* is disappointing, and the sky-line effects are in general unsatisfactory, and at times even offensive, and these adjectives are appropriate also to many of the buildings.

And Queen Victoria Street lacks restfulness in appearance, due to the inartistic cleavage referred to just above; many of the side streets running off at highly acute angles, necessitating, but seldom obtaining, well-considered corner treatment of the buildings.

In according detailed examination along this thoroughfare, the kaleidoscopic change from modern Gothic to modern Renaissance, and from modern Renaissance to modern Gothic proclaims in no uncertain note the date of Queen Victoria Street, as surely as if it were inscribed for the behoof of the beholder.

The Mansion House dates from the reign of George III., the period of its erection being 1739 to 1753, with the uppermost storey as a later addition. George Dance the Elder may be congratulated upon the result obtained, though this is largely due to the really noble Roman Doric portico and the perron beneath, lending dignity to what might otherwise prove of indifferent interest; the rusticated ground-floor storey is also a good feature. The entablature over the western flank windows would be all that might be desired were it not broken into by the windows themselves, which is an error both of design and judgment. As is so often noticeable, the balusters (except those in appanage to the windows) are thin in effect. The flank of this building is adorned with Ionic plain-shafted columns and Venetian-framed windows. Though we shall see better work in the course of our peregrinations, yet this is one which we can always regard with pleasure.

The Mansion House has, as its diagonally-placed neighbour, a block of buildings to which it stands as sponsor, and occupied by Messrs. Mappin & Webb. But the godparent of Classic extraction has, as godchild, one of Gothic proclivities; the Gothic, however, is good, be it understood. It is the plate-tracery style with acute-pointed arches that has been used, and it is a stone block with a well-managed circular sweep of building, leading round into the Poultry thoroughfare. A satisfactory effect for the whole building results from a quiet elevation, with ornament suitably displayed.

Obviously, a large number of buildings (including some probably worthy of note) must be passed over unconsidered, as the article would be otherwise of undue proportions in length. Several blocks, therefore, will now be passed, until we reach Nos. 68-70 on the northern side of the thoroughfare, and here we are confronted by a pleasingly quiet elevation, exhibiting the best portrayal of Renaissance so far surveyed west of Mansion House Buildings; there is very little ornamentation, and the entire block presents a complete and mind-satisfying appearance.

Sir Christopher Wren will play an important rôle in the buildings surveyed for this article. The first of these, the church of St. Mary Aldermary, is, however, not greatly indebted to him for design; the structure, it is true, only partially antedates the Great Fire, but it is to all intents not Wren's architecture at all. Externally, the building is not admirable, saving the imposing campanile tower at the

south-west angle. This church suffers from the ill-considered street cleavage previously referred to, the effect of thrusting its east end at an acute angle towards the thoroughfare being particularly disagreeable. The building has been very considerably restored from time to time, and on the whole sympathetically, but the more recent substitution of a solid parapet to the nave and aisle roofs is as excessively heavy as the previous open-traceried parapet was unduly light and monotonous. The two angle pinnacles at the east end of the nave-block look well.

Close by St. Mary Aldermary the two great thoroughfares intersect at a very acute angle, which, from the town-planning view-point, is a great defect.

Proceeding along Queen Victoria Street (though casting longing glances through Cannon Street towards the Cathedral), we are again confronted by a really admirable modern building in the Fire Brigade Station, which has façades in both thoroughfares. In this building (erected in 1906) we see official architecture at its best, and vastly superior to the stations for which the late Mr. Blashill used to be held responsible as superintending architect to the Metropolitan Board of Works and the London County Council. It is faced with Portland stone and is adorned on the second and third storeys with over-riding Ionic pilasters, above which is a good entablature with pulvinated frieze; an attic storey is superposed. The lower half of the building is rusticated, as also are the flanking piers throughout their height. Here too we find good balusters, for a wonder. The Ionic-adorned portion is recessed between the flanking pilastered pier-blocks, thus providing good play of light and shade.

One narrow façade near by is evidently a survival of the old street cut through at this point, but it does not merit description, except to note the quaint effect of a pantile-covered roof in such a thoroughfare as Queen Victoria Street.

Nos. 108 and 110 date back to 1873, and exhibit a Gothic façade, stone for the lower portion and the dressings, and in ordinary bricks elsewhere. There is but little of interest to note, but attention may be directed to the good monogram forming a medallion over the entrance, and to the animal "masks" used as medallions in the heads of the ground floor windows; they are good and expressive in connection with the trade of the firm for whom the buildings were erected.

We are always sorry to observe commercialism run rampant, where it takes the form of encroachments upon church property. St. Nicholas Cole Abbey is not a building to arrest our attention, it is true, but still we deplore its partial concealment by the more recent erection of business premises—and such premises!—on a portion of the forecourt. A hideous Renaissance stone abortion, with only one competitor in ugliness in the whole of this thoroughfare.

Our next stopping-place will be by the College of Arms, or Heralds' College, a work of Sir Christopher Wren's, and one upon which we never tire of gazing. Wren knew so well how to obtain effect from the judicious admixture of stone and red brick. The open forecourt, too, is apt to be picture-making, enhanced in the present instance by the stone balustrading to the parapets, safeguarding against the basement areas, and by a similar balustrading to the perron. The building is well-proportioned, plain in design but fully satisfying all artistic requirements. It is relieved by Ionic pilasters with pleasing caps, and the roof is slated.

The General Post Office block, which has served so many purposes in the course of the past few years and is now used for telephone offices, is a massive stone structure, imposing by reason of its breadth of frontage and treatment; it is not an extraordinary building, but is more than merely noticeable. The inframing of the architrave is to be noted. We cannot approve rusticated ground and first storeys over a non-rusticated basement, except where such sub-structure is effectively stronger in appearance.

The contiguous building, erected by the British and Foreign Bible Society in 1866 from the designs of Mr. E. I'Anson, is fully worthy of observation, nor, to our mind, is there throughout this thoroughfare any more admirable block. It is a good Renaissance design in stone, and it possesses an air of severe, restrained power, quite in character. Such ornament as there is is very subdued, and the effect is enhanced by the treatment of the ground storey as a plinth and by the use of a good bold entablature. The third floor window-balconies are the sole discordant feature of the design.

Another church greets the wayfarer now in St. Anne's, Blackfriars. It is of brick with stone dressings, the design being quiet and good Renaissance. The square tower is very satisfactory, saving for the starved appearance of the balusters. The boundary railings and stone gate-piers were

erected a few years ago by and from the designs of Messrs. Banister Fletcher & Sons as a memorial to the first-named gentleman, and deserve the notice of the passer-by. The church benefits from its position on an elevated site. Though important, we really cannot arrest our footsteps before the *Times* newspaper offices; they are a reproach to a great and leading journal. We will by preference retrace the street in an easterly direction, taking under notice some of the buildings along its southern side. And the first of these, nearest to the railway bridge, is St. Paul's Station, a thoroughly satisfactory and expressive piece of work, cheerfully warm in its red-brick, relieved and slightly toned down by the use of terra-cotta dressings. The proportions are good, and the slightly projecting and raised wings are pleasing; the building dates back a quarter of a century.

We must pass by a number of blocks—Renaissance, Gothic, and no-style—before we arrest our glance opposite St. Benet's Church, which stands back a few yards from the main thoroughfare. This is another work of Wren's, and though not the best it has the merit (which many of his City churches lack) of possessing an exterior that arouses interest. In the year 1879, it may be noted, there occurred a great amalgamation of parishes in this district, under the Union of Benefices Act, 1860-1. St. Nicholas Cole Abbey, St. Nicholas Olave, St. Mary Somerset, St. Mary Mount-haw, St. Peter's (Paul's Wharf), and St. Benet's (Paul's Wharf), were the parishes involved, St. Nicholas Cole Abbey (referred to earlier in this article) becoming the parish church for the united benefices, and St. Benet's being handed over to the Committee of the Welsh Congregation. The building is not one of outstanding architectural merit, but the warmth of the brickwork, the interesting swags planted unframed on the wall surface, the nice square prominent tower with its lead-covered cupola and lantern, and the charming red-tiled roof to the nave with the ancillary tiled bay roofs to the aisle provide in their *tout-ensemble* a very pleasant bit of work. The site of this church contrasts unfavourably with that of St. Anne's, Blackfriars, being on the downward grade, instead of in an elevated position.

No. 109 Queen Victoria Street is a block that demands observation. It is five storeys in height, and is designed in the Early English style of Gothic. The facing materials are stone for the ground storey, the superstructure being in yellow brickwork with stone and red brick dressings. Underneath the windows are coloured tile panels, and there is also a coloured tile frieze, whereon appear the City coat of arms and other similar devices, varied by the use of medallioned heads. The gable is not admirable with its fussy ornament and ugly crockets.

For its very ugliness we draw attention to No. 75B, erected contemporaneously with the block opposite, which we referred to earlier as encroaching upon the forecourt of St. Nicholas' Church.

The premises of the London City and Midland Bank (one of the four blocks devoted in this long street to banking purposes) are sufficiently plain, nor can this thoroughfare be congratulated upon its architectural work in this connection. The General Electric Company, too, is satisfied to dispense with art as long as it can have its business requirements satisfied; these are some of the older buildings in the thoroughfare.

And so also are Albert Buildings, erected in 1871 from the designs of Mr. Frederick J. Ward. Whilst not devoid of merit, yet this block is too restless and fussy in appearance to permit a favourable comparison with other Gothic work that we have seen in the course of our stroll. Cornwall Buildings, just above, may be regarded with greater pleasure, for in their Renaissance dress they provide a most suitable commercial block.

Architecturally regarded, we like to look at Mansion House Chambers, a nice Renaissance four-storey stone block, well-proportioned and with well-distributed ornament. The Ionic order is used effectively to the first floor, and the main frieze has a good series of swags for ornament.

In fact, the head of this thoroughfare is well treated architecturally, and No. 1 (The National Safe Deposit) provides its proper quota of satisfactoriness. It is an important stone block of five storeys (effectively only three), Renaissance in the design, which is in general plain but shows relief in the series of first floor pedimented window-heads (alternately segmental and straight), and the Ionic window-pilasters. The keystone masks to the ground-floor windows are unusually good. The circular entrance-corner is well designed, and the sole adverse criticism to be offered is in regard to the ugly range of chimney stacks along the parapet.

We will now turn our attention to the Cannon Street and

Ludgate Hill route—Cannon Street being less interesting architecturally so far as modern buildings may be concerned, but with greater wealth of historic interest.

The old name of Cannon Street was Candlewick, but to get contemporary with that name it would be necessary to retrace Time's track to the early days of the eighteenth century—perhaps even more remotely still. If we are to believe that the "London Stone"—the supposed *milliarium* of the Romans—is a locally topographical relic, then the antiquity of this thoroughfare is well established; we know that Watling Street, close by, is of Roman date. The *milliarium* was the stone used by the Romans as a distance measure gauge to all parts. We have also read of this thoroughfare as Canning Street, our source of information being the diaries of that delightful Stuart subject, Samuel Pepys, who also refers to Gracechurch Street as Gracious Street; but it is just possible that these are errors of transcription from Pepys' elaborate cypher.

Throughout Cannon Street there is, as a whole, an altogether shabbier air architecturally than appertains to its intimate neighbour, Queen Victoria Street. The buildings are possibly older, for one thing, and it is also proper to bear in mind the different nature of the business carried on in the two thoroughfares, so far as those portions westward of Mansion House Station are concerned. The first really interesting view obtained working westward (and glancing along the northern flank of the street) is that of the church of St. Laurence Pountney, which, in fact, is not in Cannon Street at all. Nor is this sample of Wren's exteriors greatly admirable. With most of his City churches it is the promise of good work within that usually proves attractive, a promise not invariably fulfilled, though the church under consideration is not one of the exceptions. Its slated, hipped roof conceals a domical interior, having Welsh vault lights. *En passant*, it may be noted that the painted decoration of this domed surface, the work of Sir James Thornhill, was an experiment (and a very successful one) for the work proposed to be done (and subsequently executed) at the Cathedral. The Grinling Gibbons carving, whether by himself or his pupils, is excellent in this church, as it is in all Wren's interiors. The plain exterior is relieved by the squat brick and stone tower with lead-covered bulbous and peaked spire.

In our walk from King William's Statue, Nos. 123 to 127 Cannon Street provide the first thoroughly satisfactory design actually fronting on the thoroughfare on its northern line. A quasi-symmetrical Tudor design in red brick and terra-cotta, it may be regarded with pleasure; the two supporting gables do not profess to be alike, but they harmonise well, and the shallow bays running beneath, with sufficiently varied head-treatment for the windows, help to produce a satisfactory design. No. 121 is a decent stone façade, plain but effective; it is, however, impossible to approve the heavy blocking out of the architrave voussours. And No. 117 is a respectable commercial block, exhibiting a free use of red granite columns, the façade elsewhere being in stone.

We must arrest our footsteps opposite St. Swithin's Church, in whose southern wall we notice the "London Stone" enriched. This is another of Wren's numerous, though not innumerable, City churches, but it compares unfavourably on the whole with St. Laurence Pountney, though it is of interest to note the same general domical and hipped roof treatment accorded to both churches. St. Swithin's tower is, however, greatly superior to St. Laurence's; it is massive in appearance, built in stone with lead-covered superposed spire. But the exterior of the church generally is poor, and as much may be said for the interior, not excepting the stained glass, the general effect being tawdry and not to be compared in favour with St. Laurence Pountney.

The General Assurance Company's premises deserve a passing glance. This is a Gothic stone façade, with red granite pilasters to the ground storey, and with stilted semi-circular window-heads. The main ornaments are dog-tooth and zigzag, whilst the whole design is quiet in effect, which in the case of domestic and commercial Gothic is so infrequent. There are various quiet and, perhaps, irreproachable designs in this thoroughfare, but of a nature that does not tend to render a street distinguished or distinguishable. There is, however, a circular corner stucco block by Budge Row distinctly worthy of notice. The circular sweep is well managed, not an easy matter in a Classic design, and the academic superposition of the "orders" is pleasing, by reason of its comparative infrequency.

Mr. H. Huntley Gordon's block, "Stafford House," is not to be commended; but it must be borne in mind that his design (such as it is) was partially hampered over the ques-

tion of rights of light, an action-at-law obliging him to cripple the design. However, we cannot suppose that the result architecturally would have been greatly different in any case. Let it be frankly conceded that it may be regarded as a matter of personal opinion, and it is this opinion that is now expressed. We would contrast this elevation with No. 25 near by, erected in 1896, a couple of years before Stafford House; it shows a piece of quiet Renaissance, the ground storey in stone, and the superstructure in red brick with stone dressings and rubbed brick pilasters. The whole is capped with a good gable, and the sparse ornamentation is nicely distributed.

No. 9, too, is a very pleasant little façade in stone; it presents an effect of solidity, relieved by projections, rather than by ornamentation.

But undoubtedly the finest façade throughout Cannon Street is the recently erected Cordwainers' Hall block, the architect being Mr. Howard Chatfield Clarke. To call this the finest block in the thoroughfare is perhaps not grammatically accurate; for though some of the buildings noticed are in their degree architectural, yet only one other (the Fire Brigade Station) deserves the epithet fine. Cordwainers' Hall shows a Portland-stone façade throughout, treated on the entrance floor as banking premises with an elaborate grey granite entrance doorway, and marble-lined staircase vestibule as an approach to the rest of the building, occupied by the Worshipful Company of Cordwainers. The ground and mezzanine floors are rusticated, and above there is a treatment of flat Ionic pilaster-work, embracing in its giant grasp the first and second floors. There is ornamentation, but not too much of it, the coat of arms carved in the grey granite being admirable. We can never, however, approve broken based pediments, which are opposed to the canons of good pedimental construction.

There is not much on the southern side of Cannon Street that appeals to the artistic eye; some of the blocks are passably satisfactory, but they are not of a nature to arrest attention, saving the Fire Brigade Station, previously referred to. Of course, the Cannon Street Hotel obtrudes itself upon the wayfarer's notice, but assuredly not by reason of its architectural virtues; it misses the qualities that render the Charing Cross Hotel pleasing, but we may suppose that Mr. E. M. Barry, the architect, whilst desirous of showing the close family relationship between the two hotels was determined that the differences should be as marked as the likeness.

And what can be urged in favour of Burroughs' Adding Machine Buildings over against the Hotel? Truly, nothing; the block is quite modern and quite ugly, it lacks style though not colour—but such colour! Green glazed bricks combined with yellow stone pilasters and dressings; shades of our forefathers, turn your gaze elsewhere!

Now the contiguous block of buildings is worthy a passing glance, unpretentious as it is and colourless; it is faced with grey stocks and stucco, and possesses a good first floor window, adorned with Corinthian three-quarter columns and pilasters. The fact is that this thoroughfare lies under the blight of commercialism, a blight that used to pervade St. Paul's Churchyard until the re-building of some of the southern blocks introduced architectural elements that raised the character to a less humble level of non-achievement. Not that we regard these phoenix blocks with pleasure, for though here and there (as in Nos. 15 to 18) the eye may be attracted, for the most part the aforesaid elements are not at all pleasingly combined; indeed, Nos. 1 to 4 are distinctly ugly, and only partially redeemed by the use of blue-grey Labradite to the ground floor.

We purpose now to relieve the eye-strain to which we have been recently subjected by wheeling about, in order to regale our sight by inspecting St. Paul's noble pile. It is thirteen centuries since the founding of the cathedral, when King Ethelbert was on the throne of Kent. It is a pity that Wren's magnificent scheme of town-planning for the City of London was not realised—at any rate so far as the vistas to St. Paul's are concerned; as it is, there is no means of obtaining a good view of the building as a whole, and the approach along Ludgate Hill, despite the widening of that thoroughfare some years ago, is very indifferent. What the proposed new Thames bridge and approach road will do in the way of vista in the not-distant future is also not a matter of pleasurable anticipation. But taking count of such views as are already obtainable, we confess our unbounded admiration of this masterpiece of Wren's. In some former criticisms the view has been expressed that a great portion of the pleasing effect of the City church interiors results from the Grinling Gibbons carvings. Of course even then there are exceptions. But in the case of

the Cathedral, were there no carved ornament at all, the work would still be a fine artistic conception, finely carried out. That there are some counterfeits in the design must be admitted, but it is not for us to cast the first stone. The dominating dome is, of course, a metropolitan feature and satisfies by its excellent contourings, with the well-adjudged counterweight in the superimposed lantern and finial. The west front, whilst not entirely pleasing by reason of the two orders of colonnades, works in well, however, with the whole block, and the two towers have that combined Gothic-Renaissance effect, in which Wren was prone to indulge. Of the two flanks, the southern is the one that lends itself to better inspection, which it well repays. This fane is an instance of the want of value of æsthetic plan for the production of an æsthetic elevation; for the ground-plan of St. Paul's is not admirable so regarded; and it is more than doubtful whether the elevational effects of the original scheme, which provided a truly artistic plan, would have been satisfactory. As it is, one never tires of looking at St. Paul's, both in bulk and in detail. The north and south porticoes are "things of beauty," and Grinling Gibbons' carving is assuredly a "joy for ever." There are those who cavil at the over-refinement, the exaggerated delicacy of these little pictures in stone, but in that company we are not included. Whether it be the charming little cherubs' heads, the fruits, flowers or trophies, there is the same excellence of treatment and of technique, and the same completeness. How fine, too, are the cast-iron boundary railings; there is the same pleasure in looking at these as at the railings to Hope House in Piccadilly. But we must stop now. Well might Wren's epitaph in St. Paul's read "Si quaeris monumentum, circumspecte."

And at last we are approaching the end of our saunter as we enter Ludgate Hill, merely noting, in passing, the fine statue of Queen Anne (in whose reign the cathedral was finished); this is a replica of the original statue that stood on the site. On its pedestal we see the quartered lilies of France, a proprietary pretence long since surrendered by England.

Ludgate Hill at its foot once formed one of the two direct western frontiers of the City proper, Temple Bar being merely an outwork further west, as Holborn Bar was with respect to Newgate. A relic of old Ludgate still exists in the statue of Queen Elizabeth now installed in the recessed façade of St. Dunstan's-in-the-West Parochial Schools in Fleet Street, but formerly occupying a niche over the central arch of old Ludgate. To possible Jewish readers of this article it may be of interest to record that, embedded amongst the other stones of the gate (which was removed in 1760) was one possessing Hebrew characters to the effect that "This is the ward of Rabbi Moses, the son of the Hon. Rabbi Isaac." A gate had existed on this site (though frequently rebuilt) for over eighteen centuries.

Having strolled to the foot of the hill in order to descend upon Ludgate, we will now wend our way eastward, looking at first at the buildings on our left. And, passing some, we will glance at the premises of the Express Dairy Company, built a dozen years ago; it is a good commercial façade in brown stone, relieved by some faience to the ground storey. The design is plain, and what ornament there is is well distributed. Messrs. Hudson Brothers' premises celebrated their majority last year, and are worthy of notice; they form a mixture of Gothic and Renaissance, for the ground and first storeys are in the former style, the second and third are half-and-half, whilst the carved panels and the gables are Renaissance. The effect of the red granite coupled columns of the ground storey supporting the grey granite arching is good.

St. Martin's Church cannot be said to suffer from the proximity of the leviathan close by, for even were St. Paul's far removed this little church of Wren's would still present a curiously plain, even ugly, façade. We are here confronted by a square tower, flanked by two wings of almost equal width with the tower. Their solid parapets are surmounted by huge ugly trusses. The façade is in stone and with very little ornament. The lead-covered flèche is the best feature.

Nos. 14 to 16 Ludgate Hill present a stone façade erected a very few years ago. The circular corner block and the balustraded balconies provide the most pleasing portions. The curious Mansard gable is not commendable.

The buildings of the Temperance Permanent Building Society, erected originally some fifteen years ago, and quite recently enlarged as much again as their original façade and capacity, must be noticed. The front is a combination of red Mansfield stone for the ground storey and the bays, with red granite columns and white stone superstructure, the contrast proving not unsatisfactory. The design is Renaissance.

but is very indifferent, and the winged figures in the arch-spandrels look uncomfortable. There is somewhat of an excess of ornament.

On the southern side of the thoroughfare we only desire to call attention to the premises of the London City and Midland Bank, erected twenty-one years ago from the designs of Mr. Thomas Colcutt. We can easily trace the hand of the architect of the English Opera House in these banking premises—the House so short-lived as the home of English Opera, so prosperous as a Theatre of Varieties. The ground storey, with its good, sweeping, circular arching, is in stone, with a red brick and terra-cotta dressed superstructure. The design is quiet Renaissance. The gables are rather poor and unsatisfactory.

And as we pass under the really picturesque railway bridge and enter into our offices in the Circus we feel that our readers and ourselves will be in accord now if never before in the course of our stroll; and though they may have “welcomed the coming” we are sure that they will “speed the parting guest.”

THE GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

MR. RAYMOND UNWIN, F.R.I.B.A., architect of Letchworth Garden City and Hampstead Garden Suburb, is the author of a highly interesting booklet entitled “Nothing Gained by Overcrowding.”

Coming as it does from one of the leading authorities on the subject in Britain, the case against overcrowding, as presented by Mr. Unwin, is brought home by some striking facts and arguments. He has worked out with minute care and analysis what happens in the development of an estate under the ordinary or by-law method, and the result that is brought about by town planning which limits the number of houses per acre. He makes it beyond question that the advantages are all on the side of the town planner and the investor.

The pamphlet is exceedingly well illustrated by a striking number of charts and diagrams, and also photos illustrating the actual difference in houses and ground space which exists between the ordinary and the garden suburb.

It is published by the Garden Cities and Town Planning Association, of 3 Gray's Inn Place, W.C., at the price of 3d. a copy.

COMPETITION NEWS.

INDIA.—The Government of India invite architects and others residing in India to submit competitive designs for residences to be erected at Delhi. The designs will be judged by a committee, assisted by the Consulting Architect to the Government of India acting as assessor, and must be sent in by December 7. Premiums aggregating 12,600 rs. are offered for the successful designs, subject to the conditions of competition.

NEWCASTLE-ON-TYNE.—The Education Committee have been recommended that competitive plans be invited from Newcastle architects for the erection of Cruddas Park school and Rye House school.

READING.—Mr. Ernest Newton, F.R.I.B.A., has been nominated by the President of the R.I.B.A. as assessor in the forthcoming competition for the proposed Kendrick Boys' and Girls' Schools.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Ethics of Bridge Building.

SIR,—Many of your readers will thank Professor Archibald Barr for his Presidential address to the engineering section at the British Association meeting last Thursday week, in which, taking a wider view than is generally taken of the engineer's duty, he showed that there were injuries which engineers might inflict upon the community apart from those things which were done for help and physical comfort. “Every man,” he said, “even the least cultured, had some sense of the beautiful and the comely, and was affected by the aspect of his environment more than he himself could realise. There had been far too great a disregard of æsthetic considerations in the work of the engineer. There

was, or ought to be, a closer connection than was usually recognised between the work of the engineer and the artist.” He quoted the names of Michel Angelo, Raphael, and Leonardo da Vinci to prove that men might be masters in the art of construction, as well as in those with which their names were usually associated. “The separation of the beautiful and the useful was quite a modern vice.”

He had not raised his voice a moment too soon. Looking at the destruction of the beautiful bridges up and down the country by county authorities, and their replacement by bridges, whether of stone, or iron, or ferro-concrete, without any consideration of the beauty of line, we realise how necessary is the preaching of Professor Barr's gospel.

Although it is notorious that many of the old bridges shaken by the motor traffic require strengthening, and although it is also known that for a sixth of the cost of rebuilding these bridges can be made stronger than ever by means of Greathead's grouting machine, which has been used with such conspicuous success at the Grange Bridge in Borrodale, on the Chester walls, at the church of Holy Trinity, Hull, and at the Winchester Cathedral by Sir Francis Fox, and though it is known that this process, properly applied, converts a crazy, shaking structure into solid monolithic strength, one hears from time to time of an order going forth from a local authority to replace a venerable and beautiful structure by some modern ugliness in stone, or steel, or ferro-concrete, to the entire destruction of the amenity of the place and its associations; and inquiry will elicit the fact that this bridge building by county authorities is sometimes entrusted to a road engineer with no architect's training or artist's capacity. The idea of its being a plain duty to the present community and to posterity of refusing to allow any bridge to be built unless the lines of its arch, the proportion of its parapet, and the returns of its ends have all been well considered by a qualified architect, and unless the local material most in harmony has been considered, is scouted as so much sentiment or needless additional expense.

What I am more concerned about is the fact that, though ferro-concrete is still only on its trial, and though as yet, so far as I can learn, except in America, no serious attempt has been made by architects to give beauty of line and artistic consideration to the material, this said ferro-concrete is thrust upon the public because of its comparative cheapness; and, to judge by such designs as I have seen in the catalogues of ferro-concrete makers, the artist has been largely left out of count.

“Man doth not live by bread alone,” and at a time when in our elementary schools the children are beginning to learn the worth of line and colour, and when it is to be hoped that the sense of beauty will slowly become a possession of the people, it is very well for us all to remember in Professor Barr's words, “That a structure of any kind that was intended to serve a useful end should have the beauty of appropriateness for the purpose it is called to serve.” And the beauty of a bridge does not only serve to provide a thorough rush over for motors at twenty miles an hour, but ought to provide also for the heart's delight of the foot passenger, who finds that living thing of beauty, a stream or flowing river, is spanned by a living thing of beauty—the nobly planned bridge.—Yours, &c.,

September 14, 1912.

H. D. RAWNSLEY.

The Prevention of Corruption Act.

SIR,—It seems from inquiries which have reached me that the provisions of the Prevention of Corruption Act, which forbids, under heavy penalties of fine or imprisonment, the asking for, or receiving, the offering or giving of bribes or secret commissions are still unfamiliar.

Many persons in the architectural and allied professions appear to be equally unaware of the existence of the Secret Commissions and Bribery Prevention League, Incorporated (President, the Right Hon. Sir Edward Fry, G.C.B.), which was formed to enforce the Act, to advise, warn and, if necessary, to prosecute, and has a large and influential membership.

If any of your readers desire any information which it is within my power to give I shall be glad if they will communicate with me.—Yours, &c.,

THE SECRETARY OF THE SECRET COMMISSIONS AND BRIBERY PREVENTION LEAGUE, INCORPORATED.
3 Oxford Court, Cannon Street, London, E.C.

MR. W. D. CAROE, F.S.A., F.R.I.B.A., is preparing a report as to the best means of preventing damage to Romsey Abbey through lightning.

The Architect.

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FORTHCOMING EVENTS.

- Saturday, September 28.*
Northern Architectural Association : Students' Sketching Club.
- Monday, September 30.*
Iron and Steel Institute : Autumn meeting at Leeds (five days).
Architectural Association : Day and Evening School re-opens.
- Tuesday, October 1.*
Royal Society of Antiquaries of Ireland : Special General Meeting at 5 P.M.; Quarterly General Meeting at 8.30 P.M. at 6 St. Stephen's Green, Dublin.
- Wednesday, October 2.*
Royal Society of Antiquaries : Excursion to Fore, Co. Westmeath.
Institute of Sanitary Engineers : Opening Sessional Meeting at Caxton Hall, Westminster, S.W., at 8 P.M.
- Friday, October 4.*
Royal Sanitary Institute : Provisional Sessional Meeting at Lewes (two days).

THE ECONOMY OF A GARDEN CITY.

MR. RAYMOND UNWIN'S little pamphlet entitled "Nothing Gained by Overcrowding" is a clever piece of pleading on behalf of the Garden City and Garden Suburb movement. He looks at the subject of overcrowding houses on to land fairly and squarely from different points of view. He admits, as, indeed, he is obliged to do, that a large number of houses per acre brings an increased profit to the individual speculative builder who has but a small parcel of land to develop and looks at his own acre of land only. Mr. Unwin has also to admit that the Garden City principle of giving each house a larger portion of land must mean a higher ground rent per house, or, in other words, that if people have bigger gardens with their houses they are obliged to pay something for them, so that the Garden City campaign must have for its objective the conversion not only of landowners and house builders, but also of those who rent houses.

Thus in working out a scheme as illustrated by diagram in his pamphlet with land at an assumed value of £500 per acre, on a square ten-acre plot Mr. Unwin compares the result of building 34 houses to the acre with that of building 15.2 houses. With the former he says that each house would have an average plot of 83½ square yards costing in ground-rent 8d. per week, and in the latter case the amount of land to each house would be 261½ square yards, but the ground-rent on the same basis would have to be 11½d., and herein lies the difficulty, for, as Mr. Unwin says, "Unfortunately the majority of people, and particularly occupants of small houses, which are the ones most usually overcrowded, care chiefly to get a house of some sort at the least cost, and have no means of knowing, because no choice is ever put before them by which they may judge, that they are paying at an extravagantly high rate for their small plots as compared with what they might pay for much larger plots."

Tenants, therefore, have to be persuaded that it is a good proposition for them to pay a little more rent, as by so doing they will get better value for their money, but it must still remain one of the problems which Garden City promoters have to face that houses and gardens must be provided at rents which people can afford to pay. It is no use telling a man that if he takes an acre of land he can get it at a cheaper rate than if he took a perch, when he can only afford to pay for the perch.

The position of the speculative builder and the landowner with regard to the Garden City movement is shown by Mr. Unwin to depend upon the extent of their interest. If the speculative builder is only dealing with a limited

amount of land it is more profitable for him individually to squeeze on 34 houses per acre, but if he has control of sufficient area to build the 34 houses on two acres and sufficient capital to deal with the extra land, he would then be just as well off by following Garden City principles. Similarly with the landowner. If he has only a limited amount, it would be true in any instance that the more houses that could be crowded upon the land the better for him with the larger number of ground-rents at a proportionately higher rate, but if by extension of the area over which the houses are spread he can bring a larger proportion of his land from agricultural use to a building estate, then Garden City practice means better returns to him for his land.

The essential factor in the successful development of land on Garden City principles and of Mr. Unwin's finance is the cost of roads, and the Garden City movement can only fully prosper by reducing the proportionate cost of roads per house. This reduction may be effected in two ways. By proper planning the length of road required per house may be diminished, and what is of even more importance, the cost may be lessened by a modified character of road.

Mr. Unwin rightly takes account of one point that has to be carefully controlled when the number of houses per acre has been limited. There is a temptation for the speculative builder to put bigger houses on the bigger plots, and these houses may then become too big for the tenant to pay the rent, so that he takes in lodgers, and overcrowding results by the increased number of persons per acre to possibly the same extent that would have been produced by a larger number of small houses, so that in regulating the number of houses per acre consideration must also be given to the cost of these houses.

From the point of view of the public benefit Mr. Unwin deals with the relative effect of building a town on the system of crowding 34 houses on an acre or reducing the number to 15 per acre. Assuming, for the purpose of illustration, a town in which an increase of population of 17,000 takes place every year, he shows that the increment value of land taken over from the agricultural area and devoted to building on Garden City lines with houses at the rate of 15 per acre would provide an increment of £102,150, as compared with an increment of £45,000 if the land were occupied at the rate of 34 houses per acre. He goes on to consider the effect which the extra acreage required to provide for the population with the limited number of houses to the acre will have upon the size of a town, in order to meet the possible objection that a very serious difficulty would arise in the distances to be covered in travelling from the centre to the circumference, and he gives diagrams

showing the bearing this question would have on a theoretical development of London on Garden City principles.

The area of London administered by the London County Council he represents by a circle having a radius of $6\frac{1}{2}$ miles. Taking the population of this area at five millions, which is at the rate of 64 per acre, he suggests that it might be possible to reduce the density of the population of the County of London to an average of 42 per acre by inducing one-third of the people to live outside the boundary, and he shows that the present population of Outer London with those who are to be persuaded to move from Inner London and an additional 4,024,165 people may be accommodated at the rate of 25 per acre within a circle having a radius of $14\frac{1}{2}$ miles, which is approximately the size of the Metropolitan Police area, so that a total of twelve millions might be distributed within the present area of Greater London instead of eight millions as now, it being possible to accommodate this latter in an area having a radius of $11\frac{1}{2}$ miles. The parts of Greater London, that is, the Metropolitan Police area outside the County of London, are evidently at present more desirable to live in than Garden City experts deem necessary, for they are capable of accommodating one-third of the inhabitants of the County and an additional four millions beyond their present population without exceeding the desideratum of 25 persons to the acre. But still there is, in parts, overcrowding in Greater London, nay, there are even slums, and a town-planning scheme for the whole area is urgently needed to prevent undue crowding by the owners or exploiters of small parcels of land. Mr. Unwin argues very truly that, although the limitation by a town-planning scheme of the maximum number of houses that may be erected upon the acre of land will cause loss to some, it is probable that no change can be introduced, however beneficial, that will not cause individual hardships. We would put the case more strongly. Overcrowding is detrimental to the public weal, and no individual ought to be allowed to make a profit out of the public detriment by overcrowding the land any more than by adulteration of food.

NOTES AND COMMENTS.

THE fragmentary reports and descriptions of the presumed unsafe condition of Sta Sophia, Constantinople, have now been brought to a definite form by a letter in the *Times* from Mr. T. G. Jackson, R.A. After giving a short description of the construction of the church, he thus proceeds to describe the mischief that has occurred: "Seen from the floor of the mosque a terrible bulge in the north-east pendentive catches the eye at once. But it is not till one ascends the dome that the full seriousness of the mischief can be appreciated. From the gallery surrounding the base of the dome it is apparent that the plan is no longer circular, but is deformed, and that the great arches have also suffered distortion. The dome consists of 40 ribs of brickwork covered with mosaic now plastered over, with brickwork between rib and rib, the whole meeting on a ring at the crown. The crown seems to have sunk, and many of the ribs have also sunk so much that some of them are in some parts nearly, if not quite, straight instead of being convex, and have, therefore, lost their arch-construction. That the dome still hangs in air and has not fallen is due to the singular stability of that form of construction. Writing as I do from the island of Ischia I observe that whereas most of the ordinary churches were thrown down by the earthquake of 1883, and are in ruins, those that had cupolas are still standing. Turning to other parts of Sta Sophia I found by plumbing the walls and columns that they were out of the perpendicular chiefly on the north and south sides, and some of the vaults, especially in the gallery, seem in danger of collapse."

Of the remains of mediæval buildings around London few are of greater interest than the church of St. Margaret, Barking, and an interesting little brochure by Miss Marion

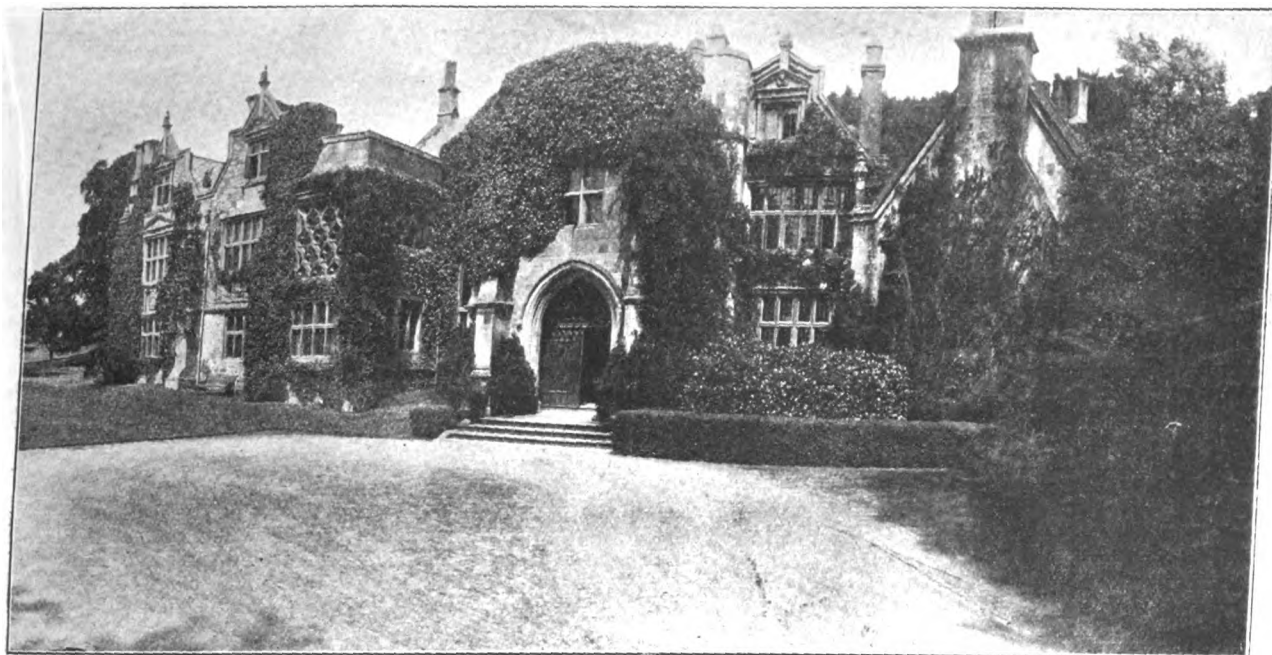
Elliston gives an historical sketch of the church and its associations, whilst making a strong appeal for funds to enable the present vicar, the Rev. John Warmington Eisdell, to continue the restoration of the church as a national monument and treasure house of history and tradition.

The prospectus of the Royal College of Art for the coming session indicates that the work is to be continued on practically the same lines as heretofore. It is still provided that students must, save in exceptional cases, take up the study of architecture before specialising in either of the four schools, namely, architecture, ornament and design, decorative painting, or modelling and sculpture. The architectural school consists, as before, of a lower and upper division, and it is clear from the prospectus that for architect students a high level of study is intended, with special attention to the inclusion of painting and sculpture as part of an architectural design.

The evil effects of the Land Clauses of the Finance Act, 1909-10, and particularly the hardship which its administration is having on small owners of property acquired by thrift, are well set out in a pamphlet entitled "The Blight on the Countryside," by Frank Alton Morgan, and dedicated, we presume without permission, to the Right Hon. D. Lloyd George, Chancellor of the Exchequer. Anything which checks the development of land injures the prosperity of the building trade, and we are not surprised that the figures which the author gives show that during the summer of 1909 the value of houses built in London was £920,597; the following year, as the dangerous nature of the Finance Act became known, it dropped for the same period to £856,265, and in 1911 to £603,164.

Next week the Architectural Association commences its winter work, both in the day school and in the evening school. The day school now comprises a three-years' course, the work of the third year being directed more to advanced design, draftsmanhip, and theoretical and practical knowledge. The staff for the coming year has been somewhat modified from that of the past session. Mr. H. P. G. Maule is the headmaster; Mr. Robert Atkinson, visiting master in design; Mr. C. E. Varnell, lecturer on theoretical and practical construction; Mr. Alan Potter and Mr. W. I. Keir, day school assistant masters; Mr. J. B. Scott, evening school master. Besides these gentlemen, Mr. Theodore Fyfe lectures on Greek and Roman architecture; Mr. Aymer Vallance on mediæval architecture; Mr. W. H. Ward on Renaissance architecture; Mr. A. O. Collard on professional practice; whilst Mr. E. Constable Alston gives instruction in the life class and Mr. H. F. Waring in the water-colour class.

The Parks Committee of the Edinburgh County Council have in consideration an improvement of Calton Hill. They had a report on the subject prepared for them by the City Superintendent, the Superintendent of Parks, and the City Road Surveyor, which report is of a fairly conservative nature. The remarks of these officials on the subject of monuments contained a good deal of common sense. They say "the question of sites for monuments was rather a difficult subject, as, until the style and character of a monument was known, it was somewhat invidious to permanently allocate sites on the plan. The promiscuous placing of monuments on the hill was as a general policy of somewhat doubtful expediency, and would require very careful consideration." We are not so fully in accord with the suggestion that on a semi-lunar bastion, which might be formed from the terrace at the south-west tourelle of the old Observatory building, a good position would be available for a telling piece of sculpture, which would show up boldly on the sky line from a variety of directions. We do not think sculpture showing up boldly on the sky line is placed under the happiest conditions.



CLEVEDON COURT.

In distributing the prizes to students attending the Rochdale Technical School and School of Art, Professor Sadler, Vice-Chancellor of Leeds University, expressed his disappointment that hardly any member of the Sketch Club gave his or her view of the industrial landscape of Lancashire or Yorkshire. Professor Sadler also spoke of certain cross currents which seemed to him to be running strongly with regard to the ideas of teaching in England. One current was running strongly towards a stricter educational discipline. There was a reaction, felt as strongly by teachers as by others, against making lessons too easy and too attractive. It was felt that in order to be prepared for the real difficulties of life school work should require a number of things dull and repellent in the first stages, things to be done with effort and against the grain, by endurance, and by dogged self-discipline. A number of things which had been out of fashion seemed to be coming into vogue again. Drill in grammar, exactness in translation, correctness of line and perspective in drawing, clearness and precision in writing—these were all symptoms of the desire for strict intellectual discipline, not as an end in itself but as a means to attaining that mastery and freedom in the use of the powers of the mind which was a necessary preparation for all higher intellectual achievement. On the other hand, there was a current running just as strongly and often in the opposite direction—the desire for self-expression and the development of artistic individuality. There had been a rebellion against the gaunt ugliness of the old-fashioned schoolroom, against the stupid conventionalism of the sleeper kind of classical teaching, against mechanical test-tubing in laboratory work, against the neglect of music and colour and rhythm of physical movement as essential forces in humane education, and, not least, against the dullness of mind which neither stimulated nor approved originality in other people.

One of the most striking phenomena of our modern life is the development of noise, and the Manchester Education Committee have been discussing the trouble of noisy traffic outside many of their schools, causing discomfort, injury to health, and hindrance to good teaching. The Committee do not seem to have been able to solve the difficulty of protecting their schools from the noise of lorries using the kerb stones as brakes on the wheels, motor engines stopping close to the schools, and tramway cars clanging as they cross points. Amongst the specifics which were advocated by various speakers were wood paving, rock asphalt paving, and double windows, but none of these were regarded as altogether

satisfactory or a perfect cure for the trouble in some of the later schools which were placed too near the public highways. The only effectual precaution seems to be that adopted by the Committee in building schools nowadays, to be careful to put them far away from noisy streets and to allow more space for playgrounds than their predecessors did.

CLEVEDON COURT, SOMERSET.

AMONG the many stately homes of Somerset, Clevedon Court, the seat of the Elton family, and one of the finest existing specimens of mediæval domestic architecture in England, holds a pre-eminent position. Situated on the Bristol road about one mile from Clevedon railway station, the handsome old structure occupies an exceedingly picturesque position, with the trees and shrubberies of Court Hill rising immediately in the background.

For centuries the mansion has been the manor-house of the lords of the manor, and was first in the occupancy of the Wakes, who claimed their descent from no less a distinguished personage than the great Hereward.

Built on the usual plan of the letter H, of which the Hall formed the cross stroke, separating the offices from the domicile proper, the present building is chiefly Elizabethan in style, although portions of the original Edwardian structure are still intact, notably in the porch, with its portcullis grooves, the Hall, and kitchen. The south front exhibits a rich yet reticent aspect, while the fine fourteenth-century gables and reticulated tracery of the windows greatly enhance the beauty of its pinnacled broken outline. The porch contains two doorways with Decorated mouldings, and in the outer arch may still be seen the grooves for the portcullis, the windlass of which is still preserved in the turret overhead. From one of the angles of the porch a newel staircase leads to the minstrel gallery overlooking the Hall, where are many family portraits. The Elizabethan gables are adorned with faces cut in stone, and the gable between the porch and the kitchen bears a female effigy with an enormous ruff, the identity of which is popularly assigned to Queen Elizabeth. On the summit of this same gable is a large bear cut in stone, with the remains of a rugged staff, one of the best known crests of the Earls of Warwick. In connection with this it is interesting to note that in the thirty-eighth year of the reign of Henry VI. Thomas Wake held at his death the Manor of Clevedon of Richard, Earl of Warwick.

Entering the porch, and passing through the fine fourteenth century doorway, one can ascend the tower or turret by means of the old stone steps, and, emerging on to the lead roof, enjoy a charming view of the beautiful Mendips. Below stretch far and wide the gardens of the Court; a fine Spanish chestnut, a Scotch fir, and a weather-beaten plane tree keeping guard over the entrance gates.

The great hall is oak wainscotted, and boasts a fine Tudor



CLEVEDON COURT.

chimney-piece; the oak roof being hidden by a modern flat ceiling. In the gable above the flat ceiling are two interesting windows, remindful of the time when chimneys were scarce and smoke abundant. In the arches of these windows are curious apertures through which the smoke escaped, and evidences are not wanting to prove that in the old days the hall suffered much from the smoke nuisance, especially in stormy weather. At the south-west angle is a room corresponding with the entrance porch, which, jutting out boldly from the Hall, with the ancient Decorated window above, contributes in no small measure to the beauty of the south elevation of the mansion. This apartment is now the oratory.

Other Hall doorways are of the De Clevedon and Elizabethan period, the latter richly carved in stone, and painted a rich dark oak colour. Through this doorway is a passage of wide dimensions, leading to the west portion of the house, with oak floor, and, like the hall, wainscotted with oak panels. On the left hand is the library, the mantelpiece of which is interesting. The Wake knot circles along the frieze from one side of the centre-piece to the other, above which are the initials of John Wake. An Elizabethan window in this room contains above the transom two lozenge-shaped insertions, one with the Wake knot and date 1570, the other bearing the Wake motto, "Wake and Pray." The library contains numerous "Titmarsh" relics in the form of letters, sketches, and caricatures. About the middle of the last century many distinguished people were frequent guests of the Eltons, among them Arthur Hallam, Tennyson, Brookfield, and Thackeray, the latter writing the greater portion of "Henry Esmond" there, while the mansion became the original of "Castlewood." Brookfield's intimacy developed into family relationship, inasmuch as he in 1841 married Jane Octavia Elton, daughter of Sir C. A. Elton.

The drawing-room is a very handsome apartment, containing interesting features, one of which is a beautifully moulded Elizabethan window looking due south, which was for years blocked up. The mantelpiece is a marvel of exquisite design and workmanship, and was installed in the reign of William and Mary by John, third Earl of Bristol, to whom Clevedon Court and Manor had passed from the Wakes, who had become sadly impoverished through their allegiance to the ill-fated Stuarts. It is recorded that this room was formerly so little appreciated that it became the stable for a pony, a tradition which has since been decried as a gross libel on the pony as well as on the magnificent apartment. On the death of the Earl of Bristol in 1698 he left directions for the

property to be sold, and his widow, Lady Rachel, accordingly disposed of the estate in 1709 to Sir Abraham Elton, in whose family it has remained to the present day.

Among the apartments upstairs is the red room leading to the Lady's Bower, a feature of which is the beautiful flowing tracery of the square-headed window of the Decorated period, overlooking the front gardens. Opposite the red room is the oak room, which is reputed to be haunted, although the ghostly visitant is no more than a plebeian cobbler.

The State bedroom is immediately above the library, and from it is reached the chapel in one of the original turrets of the south front. The piscina *in situ*, the fourteenth-century arch, and the two windows with handsome reticulated tracery are among the treasures of the chapel.

In 1767 the west front, which had become dilapidated, was rebuilt to correspond with the older portions of the premises. The windows were then of the Queen Anne period, one or two of which remain in the north front. After the demolition of the west front a façade was erected, chiefly remarkable for its lilliputian battlements and windows surmounted by ogee arches of very feeble type. This front possessed a passable resemblance to the Middle Ages, but altogether the attempt must be marked down as an abject failure. In 1862 it was again altered, no attempt being made this time to vie with the old structure, and consequently it remains comparatively modern.

The name of Elton is well known in the art world in connection with the Elton ware invented and manufactured by Sir Edmund H. Elton, the present owner of the Court.

A common sort of fusible bluish clay found in the neighbourhood is used, the decorations being formed by the same kind of clay, coloured by the addition of various oxides. A distinguishing feature of this ware is that the decoration is never repeated, no two pieces being alike. Sir Edmund employs no workman who has worked in any other pottery than his own, his assistants, who are all natives of Clevedon, being trained by himself. The pottery is situated near the stables, and pieces of the ware are placed in the gables and niches of the summer-house and outbuildings.

In 1882 a fire destroyed the greater part of the residential portion of Clevedon Court, but, fortunately, the older section of the premises escaped. It has since been carefully restored, and, with its mullioned windows and creeper-clad walls, presents a most attractive appearance. Indeed, Clevedon Court is at the present time one of the most beautiful of the many beautiful courts and manor-houses of Somerset.

SELBY ABBEY.

DR. SOLLOWAY, vicar of Selby, contributes an account of Selby Abbey to the September issue of the *Diocesan Gazette*, which, in view of the fact that the south transept was dedicated on September 26, is of special interest at this time. The article states:—

The Abbey Church of Selby has never reached a state of completion, but twice before in its history it has approximated to structural perfection as nearly as it does at the present time. The former of those periods was in the opening years of the thirteenth century, when, after a hundred years' work, a cruciform church stood on the site, generally following the "plot" that had been marked out by its designer—Hugh de Laci—the second abbot.

Though in general following the original design, slight changes had crept in with the alterations of architectural "style," and about the year 1220 the work of building was finished, and the church consisted of a central tower and a nave arcade of four Norman and four transitional bays, with a triforium on the north side partly Norman and partly transitional, and one on the south side partly Norman, partly transitional, and partly Early English, the clerestory on both sides being Early English. The transepts, north and south, were Norman, and without aisles, but each of them was terminated on the east side with a Norman apse, whilst the aisles of the nave were continued eastward beyond the crossing, each having an apsidal termination, built square on the exterior, and flanking a central apse which projected further east. So the church was finished in Early English times, and it must have been a fine composition, with its nave, transepts, tower, and choir of five apses. But at the west end the building was not completed, for though the foundations were laid for two western towers, these were only carried up to the height of the nave walls, and were then, as they have been ever since, dwarf towers.

The second date when the Abbey Church approached completion was about the end of the fourteenth century. In the opening years of that century the authorities became infected with the general desire for a more ornate choir, and a scheme was set on foot for the erection of one in the "decorated" style, the old one to be left standing till the new one was finished. The work was begun at an unfortunate time. The wars with Scotland were being fought, the hundred years' war with France was begun, the Black Death came, and numerous other obstacles interfered with the progress of the undertaking. But the various abbots took up the work of their predecessors, and about 1370-80 the decorated choir was finished, its east window being flamboyant and filled with glass representing a "Jesse," with a "Doom" in the tracery, which in later years was pronounced the finest in Europe. But the choir, which to the uninitiated seems perfectly homogeneous, is, after all, a composite one possessing "decorated" features representing every variation of that changing period, and all the more beautiful for the slight architectural differences. But even the choir was never finished. A stone vault had been contemplated, and preparations for flying buttresses made, but for some reason this part of the design was not carried out, though the clear intention of the original design is still evident in the stone springers of the vaulting to be seen internally and in the "tushes" for the flying buttresses, which may be noticed outside. But though the work contemplated was never absolutely completed, a fine building the church must have been at the close of the century, when, the Norman apses removed, the structure was practically that which we see to-day—a cruciform church with a big tower at the centre, its west front flanked by two dwarf towers.

In this condition the edifice remained, with slight alterations in some of its windows and with the addition of the Perpendicular Latham chapel east of the north transept, until the Dissolution. That historic event meant much for a monastic church of the magnitude of Selby. Its emoluments were entirely swept away, but for some unknown reason the edifice was spared in its entirety. In the general run of things, when the church of a religious house was allowed to remain, it was either the nave or the choir which was spared and used for parochial purposes, but in this instance the whole church escaped destruction, and has come down to us as the only entire Benedictine church in Yorkshire still used for Divine worship. But, as could only be expected, a great building of this description proved a burden when left as a heritage to a small town, the moneys bequeathed for its upkeep having been confiscated. The consequence was that very often the benefice had to be held in plurality with others, and in consequence of poverty and absenteeism a period of neglect and decay set in. In 1690 the upper part

of the great central tower fell, carrying with it the south transept and a portion of the south choir-aisle. A few years afterwards the tower was restored in a much debased style, but the transept, miserably patched up, was allowed to remain till a couple of years ago, a blot upon the splendid building, the south side being unrelieved from east to west, and presenting a somewhat monotonous appearance.

The lowest point in the period of decline seems to have been reached about the beginning of the nineteenth century, when the nave was unused except as a place for the storage for market stalls and for the drills of a local corps of riflemen, the guns kept at the west end of the north triforium, and the ammunition stored in an unlit parvise over the north porch. But this was only the darkness before the dawn. About the middle of the century a better state of things was inaugurated. The churchyard was put in order, the nave walls were straightened, the sodden earth cleared to a considerable depth from the exterior of the building, the floor of the nave lowered to its original level, and an unsightly partition wall separating choir and nave taken down. These nave repairs were followed about twenty years ago by the restoration of the choir, when, at a cost of about £15,000, the whole of the eastern portion of the church was put in to excellent order, and once again the whole edifice, with the exception of the ruined south transept, was used for Divine worship. A few years later ominous signs of settlement in connection with the central tower were observed, the ultimate result being that the debased upper portion was taken down to relieve the foundations from this great weight, and a considerable amount of underpinning of the tower piers inaugurated. Though absolutely essential for the safety of the building, the result was not pleasing when viewed from the outside. That which was left of the tower was the old Norman portion, eminently suitable when first erected as the central tower of the church, with its short apsidal eastern limb, but squat and unsatisfactory for a building of the present length, and the beautiful monotony caused by the absence of the south transept was considerably accentuated by the lowered tower.

In the year 1906 it was thought necessary to improve the services of the church by the provision of a new organ, and in various ways the money was raised to carry out this project, the instrument, placed in the Latham chapel, being dedicated by Archbishop Maclagan in September of that year. But this organ was destined to have but a brief life, for only a month afterwards, on October 19, 1906, a fire originated in the very chapel in which the instrument had been placed, demolishing not only the organ itself, but causing terrible destruction in the church for which it had been provided. From end to end the building was unroofed, all the woodwork, save a small portion of the screen at the entrance to the north choir-aisle, the beautiful canopy over the font, and the bosses of the nave roof, being destroyed. The stonework was greatly damaged, but the walls were left standing, and it seemed as if another addition had been made to the "monastic ruins" of Yorkshire. But through the splendid optimism of the late vicar, backed up as he was by an army of enthusiastic workers, a scheme for complete restoration was taken vigorously in hand. Local and county committees were formed, a rousing appeal was issued broadcast, and Yorkshire people—indeed, the whole country—came to the rescue. Subscriptions poured in beyond the expectations of the most sanguine, and under the direction of the Abbey architect (Mr. J. Oldrid Scott) the work was at once proceeded with. The nave was the first portion that was undertaken. A complete system of underpinning of piers and walls was effected, the stonework, wherever damaged, was restored, the roof renewed, the old bosses repaired and put back in most cases, and so rapid and enthusiastic was the work of rebuilding and raising the required funds that on the anniversary of the fire the nave was reopened at a joyous service on October 20, 1907.

There was practically no cessation of the work, however, for the restoration of the choir was immediately taken in hand. The choir-stalls were renewed, the beautiful decorated roof restored, and a choir-screen of exquisite workmanship added. The reredos was carved by Peter Rendel, of Ober Ammergau, and the unique series of wooden aumbries on the north side of the sacarium restored from drawings, photographs and rubbings of the old ones. The sedilia and stone altar-screen had been much injured, but these and the other damaged stonework were thoroughly repaired. The Latham chapel and the portions adjacent had been greatly damaged. Infinite skill and patience, however, surmounted all difficulties, and not only was the whole of the havoc wrought by the fire dealt with, but much decay that had been brought about by natural causes, and simply accelerated by the con-

flagration, was thoroughly repaired. A new organ was built, a very fine pulpit erected, a new lectern took the place of the old brass one, the glass in the windows, wherever possible, was restored, choir and sanctuary fittings, hangings, carpets and other furniture were supplied, the eight old bells were recast and two new ones added, and on the third anniversary of the great disaster the restored Abbey Church was re-opened by the present Archbishop.

The whole of this scheme entailed a tremendous amount of work on the vicar and those who worked with him, but the result of their labours was that before the end of the re-opening services the entire amount that had been necessary—about £45,000—had practically been raised. But it was thought by some that the time had come when the disaster caused by the fall of the tower in 1690 should be dealt with, and an appeal was sent out for the rebuilding of the south transept. This brought in a sum of over £500, and with this money the foundations of the transept were laid during the vicariate of the late incumbent, so that if ever opportunity offered the work could easily be proceeded with. The wait was not a long one, for in January 1911 one of the parishioners, Mr. William Liversidge, J.P., offered to defray the entire cost of the work. This generous donor had for half a century had the interest of the Abbey Church at heart. He had been the leading spirit in the mid-Victorian restoration of the nave, and by his generosity he had done much from time to time for the good of the fabric. This gift of the south transept seemed a fitting termination of the long career of usefulness spent in enthusiastic service for the Abbey, but not long had this work been begun when the donor made a further gift, by offering to insert stained glass in the large south window of the new transept, the total cost of transept and window being about £10,000. That window has now found its place in the Abbey, and was dedicated by the Archbishop, along with the transept which it adorns, on September 26. Beneficence of this kind seems infectious at Selby, for, whilst the transept was in course of erection, another of the Abbey's benefactors came forward—Miss Standerling—and offered to place memorial glass in the great Perpendicular window of the other transept, at a cost of £800. Miss Standerling had already made an excellent gift to the Abbey by presenting a carillon which had cost £600. This is placed in the tower, the upper portion of which, in beautiful Decorated style, has been erected upon the old Norman work, and fits in most harmoniously with the exquisite work of the same style in the new transept. The glass in the south transept represents local scenes connected with the history of the Abbey and town; that of the north transept will contain scenes, historic and legendary, illustrating the life and work of St. Germanus, the patron saint of the Abbey.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

IV.—FACADES.—DOORWAYS.—CAMPANILI.—DOMES.

(Continued from last week.)

IN Orvieto and Siena Cathedrals we have examples very rare in Italy of later Gothic fronts entirely finished. In both cases we have an elevation of great richness and much beauty of detail. They are, however, applications to the building, veneers on a large scale, for the outline of either bears but an imperfect reference to the constructional form of the building within. Gables appear for ornament without roofs behind them, and the aim of the designer would seem to have been akin to that of the scenic artist who presents us with a frontispiece and does not allow us to turn the corner or view it, save from one point. Two very important façades left unfinished in the Middle Ages, those of the Duomo and Sta Croce at Florence, have been completed within the last half century, and that of Arezzo Cathedral is now being proceeded with. These unfinished west fronts were generally first of all completed in very rough brickwork, and the marble facing was either never done at all or scarcely advanced beyond the base. One of these unfinished façades, that of Sta Anastasia, Verona, might, from the truthfulness of the church and the exquisite beauty of the arrangement of the red, white, and grey marble in its western doorway, have become one of the most noticeable in the whole of Italy; while from the beautiful

veneeing of the same material which covers the lower portion of the cathedral walls at Perugia it may fairly be thought that we have lost as much by its non-completion as by that of any other unfinished building in the country.

Italy presents fewer specimens than any other country of the transition from the round-arched to the Pointed style of building. The use of the Pointed arch was accepted at last as a necessity and cannot be said ever to have been welcomed. The first buildings in which it is seen worked out fully in detail are those of Nicola Pisano, but few examples exist of good Pointed Gothic work earlier than his time. The cathedral and other churches in Genoa are certainly exquisite works, but they appear to owe their external design rather to the influence of (perhaps) Sicilian taste than North Italian, and the exquisite beauty of the west front of the cathedral there owes a great deal, at any rate, to French influence, refined and decorated by the extreme taste of an Italian architect.

Of doorways enclosed within porches, such as we see at home or in France and Germany, Central Italy presents few examples, but its cities are extremely rich in doorways of a minor kind, among which must be mentioned such exquisite specimens as the three western ones of Sta Maria, Toscanella (Late Romanesque), those on the north and south sides of the nave of Orvieto Cathedral, that to the Lower Church at Assisi, and two particularly graceful specimens at Sta Agata, Perugia, and Sta Maria della Salute, Viterbo, respectively.

Generally speaking, these doorways are strongly suggestive of an imitation of earlier examples, such as may be seen in the very fine one of the Palazzo Pubblico at Perugia, where the arch is semicircular, though the date cannot be earlier than the beginning of the fourteenth century. Generally in an Italian Gothic doorway the opening is square-headed with a lintel often formed by an ingenious dovetailing of stones together, of which good examples occur at Fiesole, Monte-San-Savino, and in San Paolo, the most important Pointed Gothic church at Pistoja. The jambs of the doorways are sometimes only moulded, but oftener adorned with plain or twisted shafts; the sections of jamb and arch are generally the same, and if there is any sculpture it is introduced on a small scale in the lintel, as in the small doorway on either side of the nave of Orvieto Cathedral, or in medallions round the jamb and arch.

A feature which must have struck everybody who has visited the Italian churches is the extra-mural monument. One remarkably fine early thirteenth-century example, with a trefoiled arch under one of those depressed gables that the Italians were so fond of, occurs against the wall of Sta Maria della Vigne at Genoa; another of singular beauty, supported on a basement of rough brickwork, may be looked for at the angle of the Piazza San Domenico at Perugia. Here the marble shafts, sturdy and simple, support the groining and arches on each face, above which a brick pyramid forms a finish at once sufficient for good effect, and suggestive to architects who fear the naked simplicity of good work and noble ideas, and overlay them with petty detail, in too many cases only to the detriment of all the nobility of the work. Of all these extra-mural monuments, few exceed in beauty those outside Sta Anastasia, the great Dominican church of Verona. Here the Pointed trefoiled arch on each face of the canopy over the tomb springs from four detached shafts, and fits very closely into flat gables or pediments, above and from which rises a perfectly plain pyramidal mass of stone. The very simplicity of the design of these extra-mural monuments is their greatest charm, and so conscious were the designers of this that they would appear to have lavished all their care and their refinement upon their design.

One feature of an Italian church exterior will always be remembered with pleasure, and that is the campanile.

The line of railway between Modane, the French frontier station, and Turin introduces us to a very charming type of steeple, which may be called the Piedmontese. It consists of a well-proportioned unbuttered tower, with one or more ranges of windows, and surmounted by a tall plain octagonal spire resembling those met with in Gloucestershire and Somersetshire, sometimes pierced with lights, but without broaches, and at each corner of the tower is generally a species of pinnacle shaped by two slabs of stone into the form of a spherical triangle, which, in some instances, when seen in profile, bends forward slightly. One of the most engaging of these Piedmontese steeples, seen rising from the middle of one of that succession of little towns nestling under the Alps and which seems to harmonise so admirably with the scenery, is at Chiomonte, near Susa, the steeple of whose interesting little

cathedral departs from the normal type hereabouts in that it is composed of a more massive tower, surmounted by an octagonal flèche covered with lead, and recalling, in some respects, those of Hertfordshire. The tower, which is almost entirely of Romanesque architecture and built of white stone agreeably relieved with pale brown, rises from rather a tall plain base of grey stone in oblong blocks. Above this massive substructure the tower rises in six stages irregularly pierced with round arched openings, sometimes in pairs, sometimes in triplets. This irregularity constitutes one of the chief charms of Susa Cathedral tower. At the summit is a pretty piece of embroidery in the shape of a Late Flamboyant or very Early Renaissance parapet, at each angle of which is a slender octagonal turret of the same architectural character supporting a metal spirelet interrupted at about half its height by a semi-detached iron band—a curious addition, which, also encircling the central flèche, gives a piquancy to the ensemble.

This campanile at Susa, which dates from the middle of the eleventh century, stands in the same relation to all the other Lombardic towers in the adjoining Val d'Aosta, and also perhaps in the whole of Piedmont, where the existing tower of the destroyed abbey of Fruttuaria, begun in 1003 and consecrated in 1006, afford striking examples of such creations.

The imposing towers of the cathedral at Ivrea may claim greater antiquity than the interesting campanile of rather more elegant appearance belonging to the destroyed abbey of San Stefano in the same town, and which was erected by the Emperor Henry II. (the Pious) during the first half of the eleventh century.

These towers, and others in the neighbourhood of Susa, contain the oldest dated specimens of those characteristic corbel pulvins—made rather elongated to correspond to the depth of the wall. They are often cut flat at the sides, and from the second half of the tenth century and onwards were selected by the Lombard guilds for their bell-towers instead of the Ravennese corbel pulvins with a profile of the ordinary ovolo type, found as far back as the eighth century in the grand house of Theodoric's Palace at Ravenna.

Many of the towers seen in Westphalian Prussia, as, for instance, those at Herford, Lippstadt, and in the country round Paderborn, bear a very striking resemblance to those at Fruttuaria.

Between Turin and Genoa there are few steeples beyond the ordinary brick campanili of the Lombard type at Asti and Alessandria to engage the attention, but at Genoa we are confronted with quite another class.

These campanili, which are found not only in Genoa itself, but in the neighbouring country, are more northern in their character, and are plain towers with two pierced stages at the summit, divided by a chevron moulding from each other. Each stage is panelled with a corbel-table of several round arches, and pierced with windows of two or more lights. The whole is covered with a stone spire, equal in height to about one and a half stages, with a small spire—a copy in miniature of the great one—at each angle. The bell-tower of San Agostino at Genoa—a fine but unhappily desecrated church—is one of the most beautiful specimens of its class. It is ornamented with square pieces of black and white diaper, in marble, and the small spires, which have no supporting turrets, but die off against the oblique sides of the great spire, as in the central one of Tournai Cathedral, are completely encrusted with black, green, and blue encaustic tiles.

San Giovanni, another desecrated church, on the quai, has a campanile surmounted by a spire of the same style as San Agostino but simpler, while that of San Siro—detached from that fine Renaissance church—is almost unique in having small lights or squinches on the cardinal sides of its spire.

There is a striking example of this Genoese steeple in the central one of the church at San Salvatore, near Chiavari—as nearly unaltered as a building erected in the middle of the thirteenth century can be in Italy, and affording a more instructive lesson as to the original Genoese arrangement than any church of the city does, where successive alterations have defaced the original designs. The great square tower of this church at San Salvatore occupies the entire crossing. It is of three stages, of which the first is considerably the highest, with one large round-headed window on each face: each of the two upper ones has a four-light round-headed window, sub-divided by coupled shafts of white marble. Each stage is terminated by a corbel-table and chevron moulding, and the whole is capped by an octagonal

stone spire, with a smaller one at each angle, as is the custom in Genoa. This one at San Salvatore is further enriched by a dormer window on four of its faces. The Pisan and Lucchese campanili are distinguishable from other varieties by being generally divided into a succession of stages, in which the windows increase in number or size regularly as they rise from the ground. Those of the churches in Lucca admirably illustrate this type, the cathedral tower being an example of the early round-arched kind from which those of San Michele, San Frediano, and others were derived. This is, for 50 or 60 feet, perfectly plain, and then occur five equal stages, divided by string-courses and containing respectively—beginning at the lowest stage—windows of one, two, three, four, and again four lights. The tower of San Frediano is similar, but without any horizontal strings; but all these Lucchese towers are finished with forked battlements.

(To be continued.)

INNSBRUCK.

(See Illustrations.)

SITUATED amidst scenery of romantic grandeur, hemmed in by lofty mountains on either bank of the winding River Inns, the capital of the Austrian Tyrol attracts many lovers of Alpine scenery. Apart, however, from its natural beauty, the visitor in search of old work will not seek vainly in the streets and by-ways of this little metropolis, for Innsbruck bears the impress of antiquity, as do also the quaint old villages that cluster around.

On modern Innsbruck one need not dwell; it is well endowed with good public and private buildings, and from its streets at every turn fresh glimpses of the beautiful surrounding landscape are disclosed.

As it is, therefore, to the old quarters of the town that those interested in its mediæval work are drawn, attention may first be directed to the principal church (Hofkirche), the national resting-place of the illustrious dead of the Tyrol. Built between the years 1553-63 by Ferdinand I. in memory of his grandfather, the Emperor Maximilian I., it is celebrated as containing the tomb of Maximilian.

This monument is an impressive sight, with its attendant bronze statues on either side, each of which represents a real or supposititious connection with the House of Hapsburg; conspicuous for artistic merit is the statue of King Arthur of England. The tomb itself is executed in white marble, with exquisitely carved panels illustrative of the life of the Emperor, whose effigy in bronze surmounts the canopy, the tomb being railed in with excellent wrought-iron work. In the same church, in striking contrast, owing to its modern simplicity, stands the monument of Andreas Hofer, the liberator of the Tyrol, to whom cruel fate destined a martyr's death, but now of cherished memory.

The Hofburg, or Palace, in close proximity, possesses some interesting State apartments, and a collection of portraits of the Royal house.

The principal street (Maria Theresien) contains much that is interesting, and in its immediate vicinity are to be found the best examples of the architecture of old Innsbruck.

A notable example of the Rococo style is the "Helblinghaus" (Catholic Casino); in the same street rises the old Stadthurm, or belfry, whilst the arcades which enclose the street on either side enhance its picturesque aspect.

Opposite the "Helblinghaus" is the "Goldenes Dachl," or "House of the Golden Roof," perhaps the greatest mediæval attraction in Innsbruck. A late Gothic oriel, its roof is now covered with gilded bronze tiles. Its erection by tradition was attributed to Frederick, surnamed "of the empty purse," as a disclaimer against that unenviable reputation, but now proved to have been built by Maximilian I. as a memorial of his marriage to Maria Bianca Sforza of Milan, this theory being held as established by the character of its frescoes and the inscribed date, 1500. It bears a striking resemblance to the Venetian work of that period, which would bear out the suggestion of Italian influence.

Many other, but perhaps minor, objects of interest abound in the old parts of Innsbruck, which cannot be dealt with in a brief description, but no one should quit the Tyrolean capital without visiting its charming surroundings, such as Castle Ambras, so romantically situated on the wooded mountainside of the Mittelgebirge, with its noble Spanish saloon and exquisitely carved woodwork in ceilings and doors, its historical frescoes of the rulers of the Tyrol, and its wonderfully rich collection of old armour, works of art, curios, antique furniture and paintings. Then, too, one



THE MÜNZTHURM AT HALL, TYROL.

should not neglect to visit the adjoining little town of Hall, possessing in itself much of interest in its venerable churches, its old town hall (Rathaus), and quaint, hilly streets. Of Roman origin, it is still famous for the salt mines in the neighbourhood, which furnish its chief source of industry.

It is not within the scope of this article to touch upon the charm of the mountains and valley wherein Innsbruck lies embedded like a gem in the fairest setting, but should perchance any reader feel induced to visit this town, whose attractions are but faintly described, no one will do so with regret.

UNIVERSITY INTELLIGENCE. BIRMINGHAM.

MR. RAYMOND UNWIN, F.R.I.B.A., will give two courses of lectures on Town Planning at Birmingham University on Thursdays during the ensuing winter and spring terms. The first course on "Civic Design and Town Planning" will be in two parts, "Units of which the plan is composed" and "The relation of the site plan to the town plan." These

lectures will be delivered at Edgbaston in the morning, while those on "Social origins and economic basis of towns" are to be given in the afternoon at the University in Edmund Street.

LONDON.

A COMPLETE course of instruction in heating and ventilating designed for architects and heating engineers has been arranged at University College, Gower Street, W.C. The lectures will begin on October 16, and will be given by Mr. Arthur H. Barker, B.A., B.Sc. (Lond.), Whitworth Scholar.

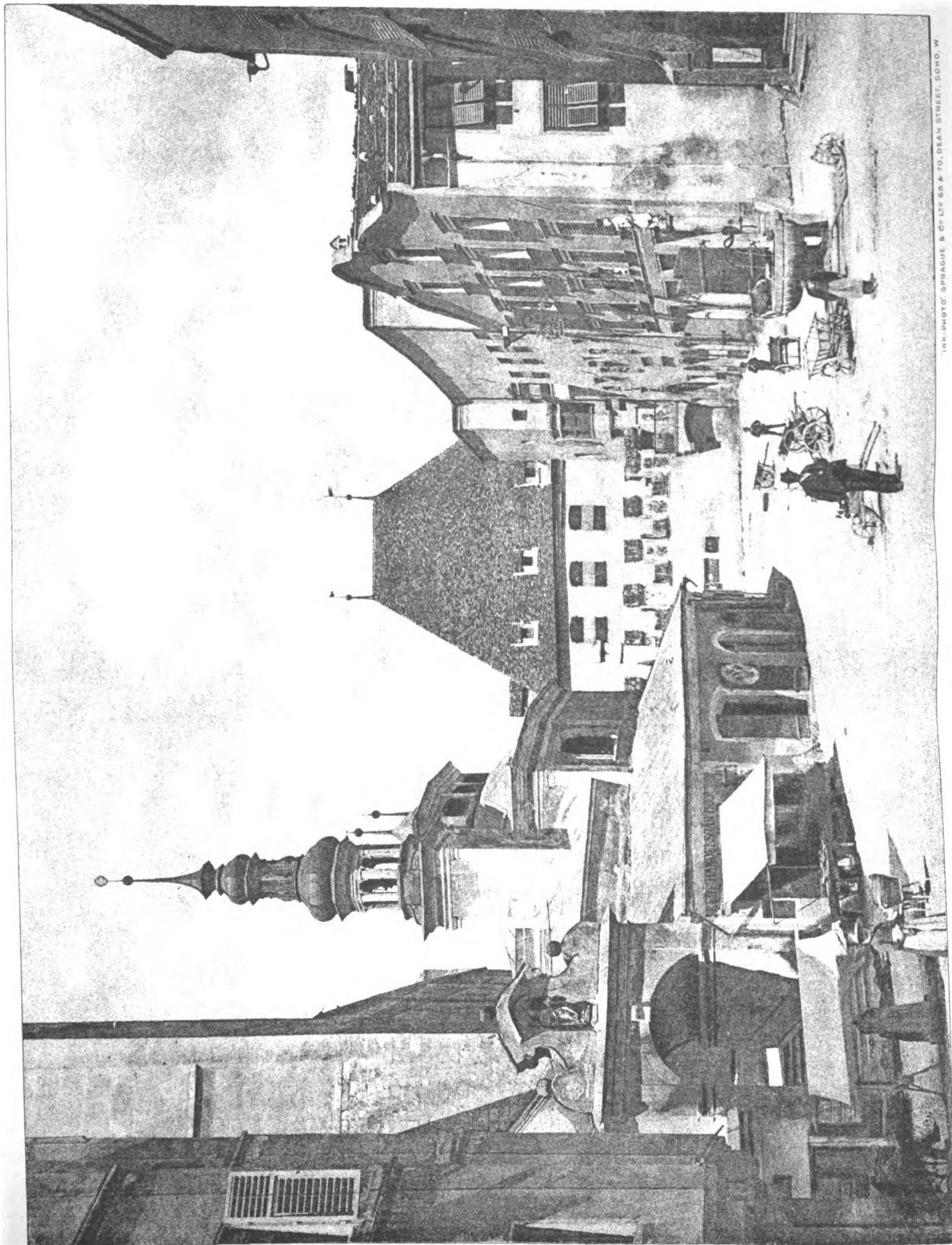
ILLUSTRATIONS.

VIEWS IN INNSBRUCK AND HALL.

OUR illustrations this week are described in the article above on Innsbruck.

MR. J. F. MCCARTHY, B.E., Dublin, has been appointed architect to the Rathdown Board of Guardians, in room of the late Mr. George T. Moore.

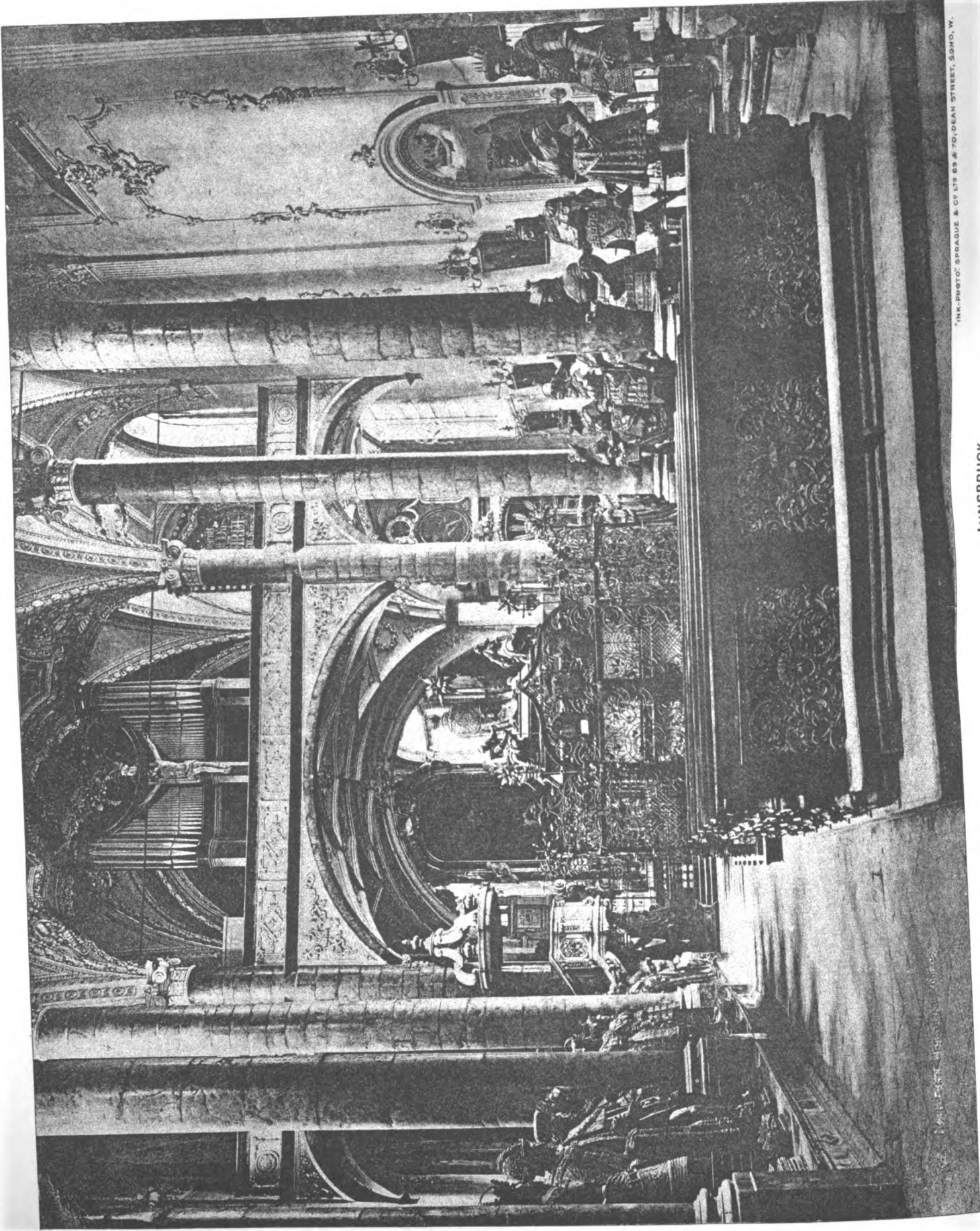




MARKET PLACE AT HALL, TYROL.

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INTERIOR OF HOF-KIRCHE. INNSBRUCK.

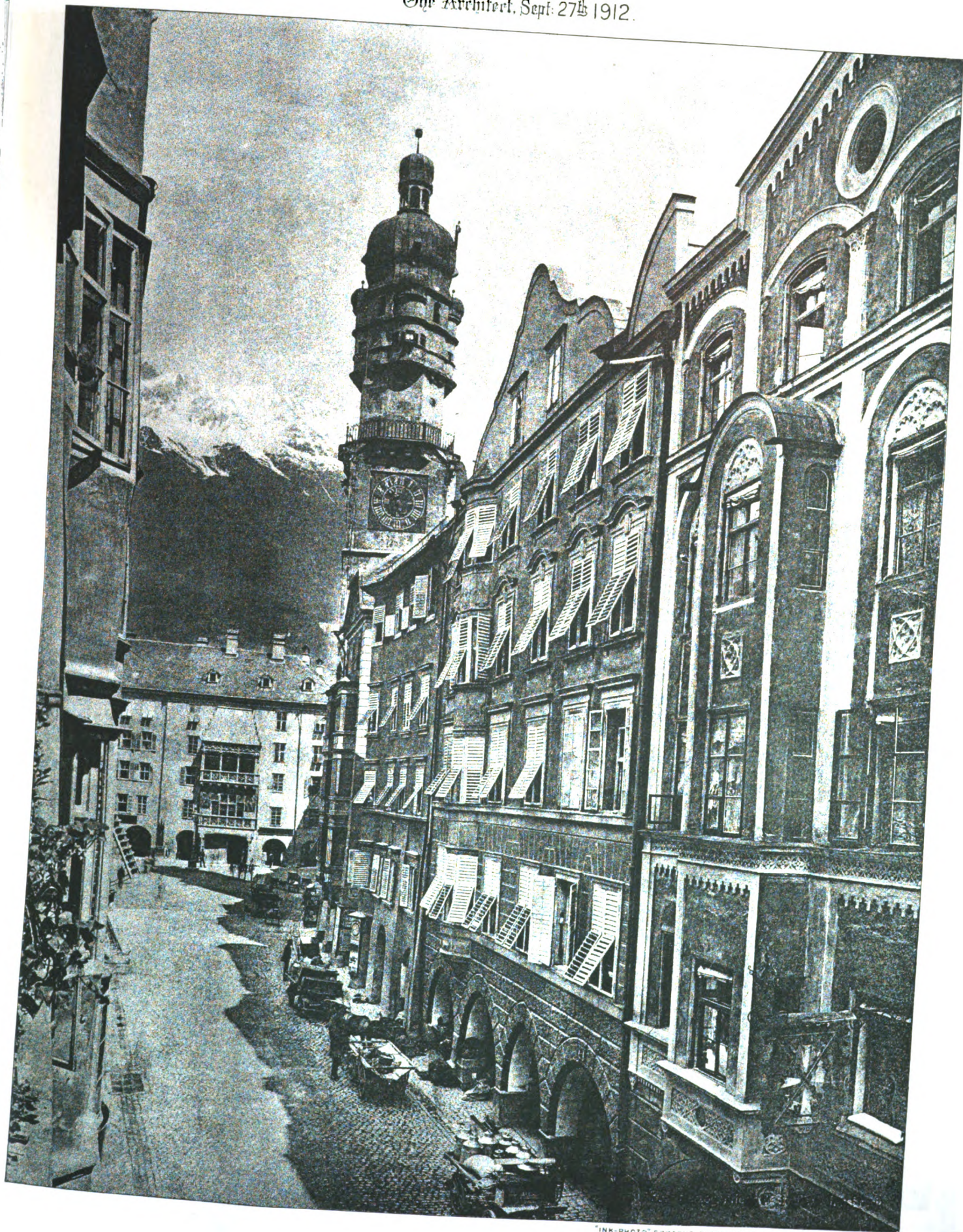




"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, LONDON, W.

THE CATHOLIC CASINO, INNSBRUCK.

The Architect, Sept. 27th 1912.

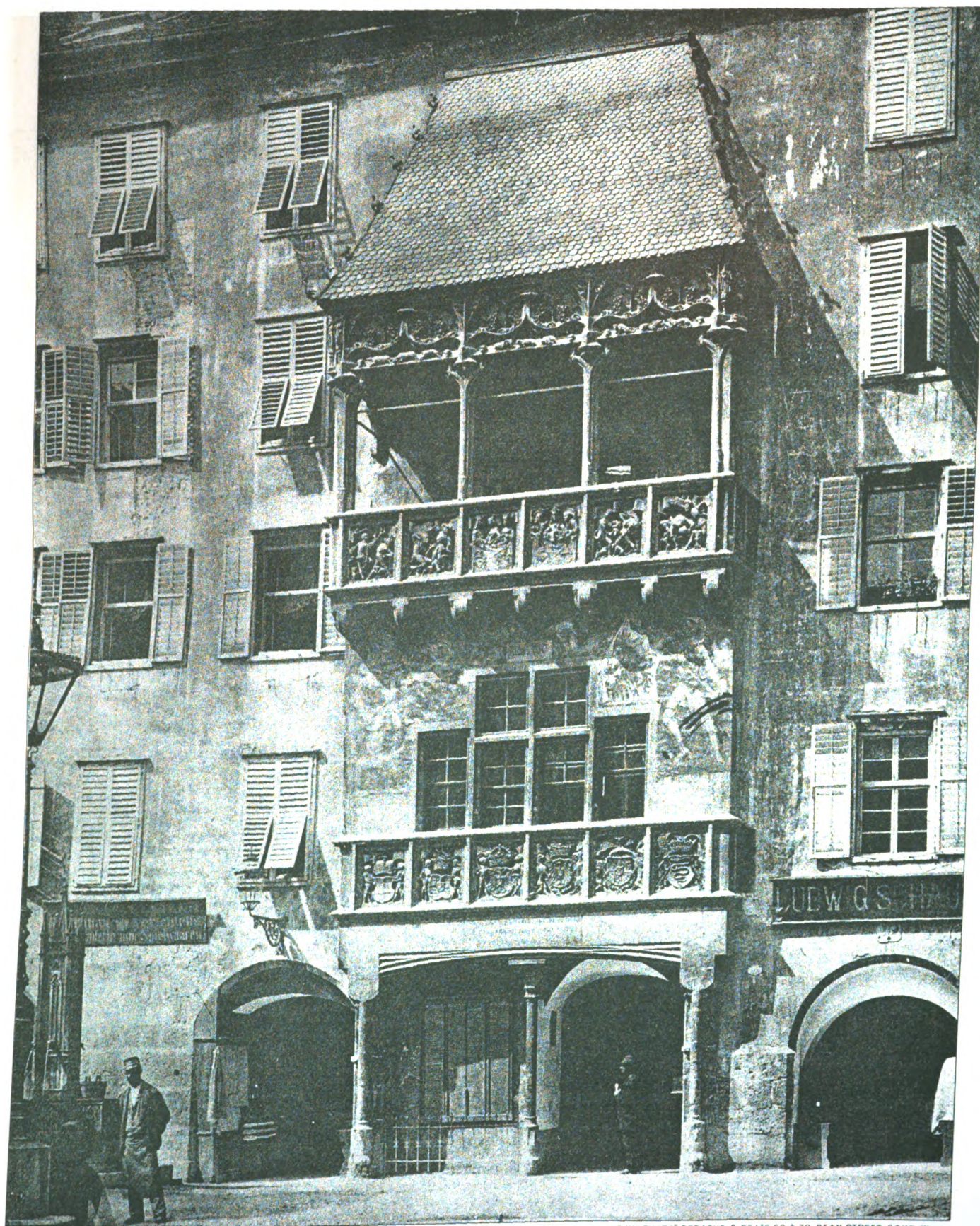


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HERZOG FRIEDRICH-STRASSE, INNSBRUCK.



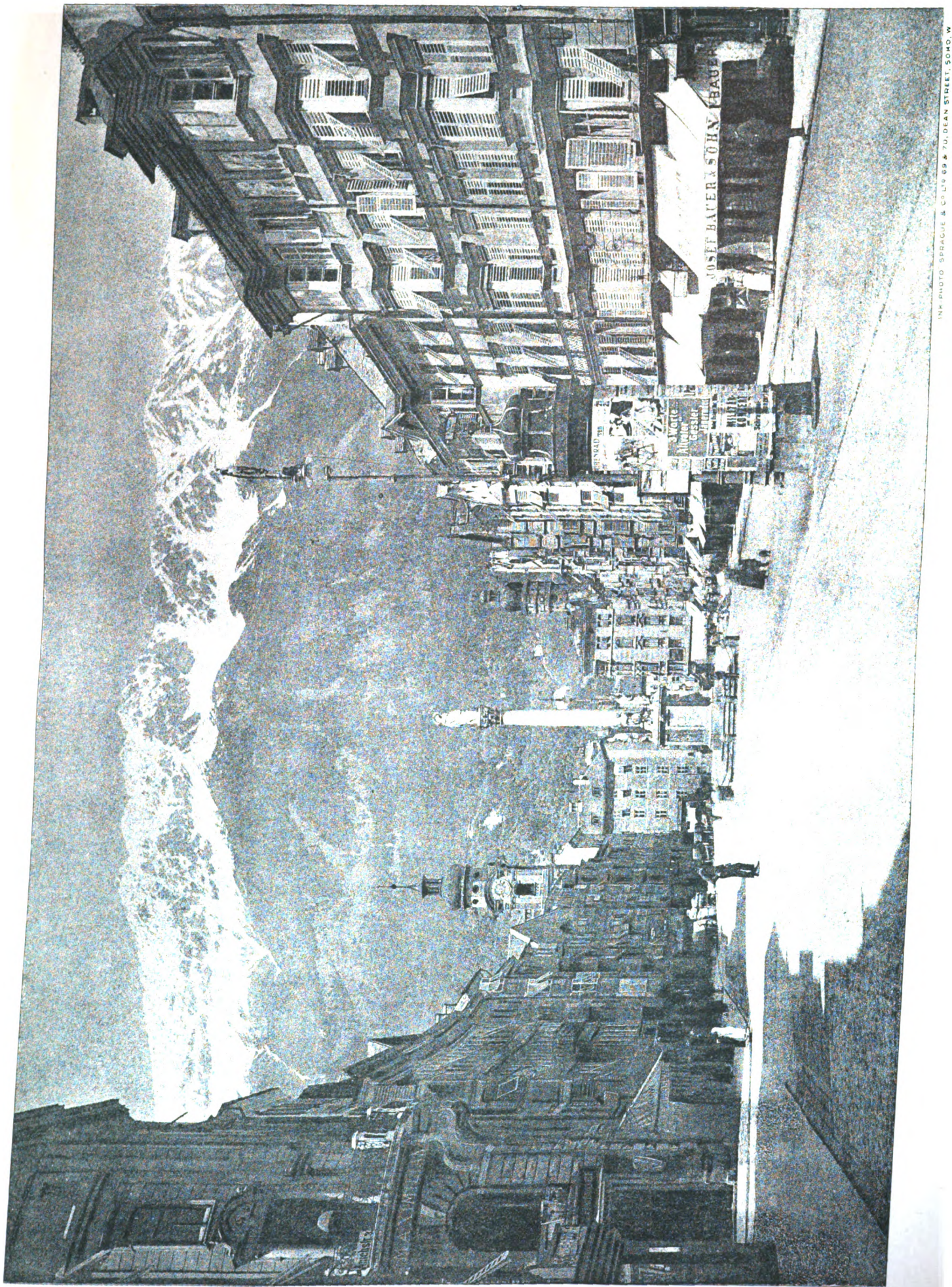
The Architect, Sept. 27th 1912.



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THE HOUSE KNOWN AS "GÖLDENES DACH," INNSBRUCK.





THE PHOTO SPRAGUE & CO. LONDON & 70, DEAN STREET, SOHO, W.

MARIA-THERESIEN-STRASSE, INNSBRUCK.



INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—II.

(Continued from last week.)

THE State rooms at Chatsworth and Hampton Court Palace, which were both in course of formation at about the same time, commencing with the year 1687, illustrate very forcibly the extreme limit of the carver and painter of the reign of William and Mary. The first mentioned was the chief country residence of the fourth Earl and first Duke of Devonshire, who was born in 1640 and died at Devonshire House, Piccadilly, on August 18, 1707. The south elevation, the State rooms and one side of the internal court are the work of Talman now existing. In 1820 Sir Jeffry Wyatville built the north wing, altered Talman's staircase in the great hall, and made several other additions in a style very much out of spirit with the delightful work of the original architect. A comparison of the productions of these two men calls for some comment. Wyatville appears to have quite lost the scale of his work, and went ahead with his alterations without any sympathetic regard for the work of his predecessor, resulting in a regrettable lack of harmony.

Mention has already been made of Samuel Watson, who spent the greater part of his life at Chatsworth in conjunction with Thomas, Young, Joel Lobb, and William Davis, the two latter men being employed by contract with Watson to execute the lime tree carving in the Great Chamber in September 1692 for £400. This room (now called the State Dining-room) is situated on the first floor, and measures about 50 feet long by 30 feet wide, and is very lofty. The ceiling here is the work of Antonio Verrio, who also painted the ceiling of the chapel. He was born about 1639 at Lecce, near Otranto, in South Italy, and studied at Naples. He spent some time in France before he was invited to England by Charles II., who hoped to re-establish the Mortlake tapestry works under the management of Verrio. This scheme, however, was abandoned, and Verrio obtained various commissions in England, one of the first being decorations for the Earl of Arlington, at Euston, Suffolk, in 1671, after which he was appointed chief painter to the King at Windsor Castle, where he had a residence, and employed his leisure moments in gardening, to such success that he obtained the Royal position of master gardener, and was given a house in the Mall near St. James's Palace. His other patrons include the Earl of Essex, for whom he executed paintings at Cassiobury Park, and Lord Montagu, at Montagu House, Bloomsbury, where his frescoes were, unfortunately, destroyed by fire. He designed the equestrian statue of Charles II. for Chelsea Hospital, which was executed by Henry Cooke.

Verrio also worked for James II., but his private practice had increased so much during the few years of this reign that he was able to dispense with Royal patronage on the accession of William III., and found his time fully occupied at Chatsworth, Burghley House, and Hampton Court, where he carried out some work for Queen Anne. He died at the last-mentioned place in 1707.

Other painters of note at Chatsworth are Ricard and Laguerre, who worked here with Verrio in 1689, and the later men, as Lanscroun, Highmore, and Sir James Thornhill.

The fine marble reredos in the chapel was carved by Caius Cibber. It is of delicate proportions and graceful outline, constituting the best preserved example extant of this sculptor.

The Duke of Devonshire wrote a descriptive manuscript account of the various works in progress, which he illustrated with coloured views of the principal features. The book is preserved in the library at Chatsworth, and is invaluable as a record of the events and names of workers engaged upon the various alterations carried out. The sculptured court at the back of the painted hall contains some fine stone and marble carving. Samuel Watson, who died in 1715, was succeeded by his son. His work has been carefully recorded by his grandson in a folio book, entitled "Designs, Agreements, and Bills of Carved Work executed at Chatsworth by Samuel Watson from 1690-1712."

Further descriptions of Chatsworth are to be found in Dr. Leigh's "Particular Description of Chatsworth," 1700, and Mackay's "Tour through England," 1724; while a more recent account is contained in Mr. H. A. Tipping's work "In English Homes," vol. III., from which some of the foregoing material has been compiled.

The State rooms contain a wealth of parquet floors similar in pattern to the typical French floor as used at Versailles

and the Louvre, Paris; while parquetry inlays decorate the panels of the overmantels in a variety of geometrical patterns. There is a wonderful freedom in the carvings, which suggests that the sculptor rejoiced in his work. The Chapel Gallery contains rather bolder carving than the State rooms. The central alcove is flanked by pedimented doors, between the scrolls of which a large vase of flowers with festoons is carved, supported on either side by winged amorini.

Words fail to describe the many features of interest and beauty at Chatsworth, which, in common with other of the larger mansions of England, has suffered from unskillful "restoration" in subsequent times. Its chief glory surrounds the State rooms on the first and second floors of the west wing. The panelling of the billiard-room on the ground floor is a mixture of importations, while the later decorations of some of the principal bedrooms vary considerably in quality of finish.

Hampton Court Palace is very similarly treated as regards the additions made for William III. by Wren. The State rooms for the most part are panelled in a very simple and effective manner, with bold bolection mouldings, dado rails, and skirtings. The oak carved chimneypieces form the principal features of each room, the walls of which are covered with pictures. The Queen's Bedroom has an interesting octagonal ceiling coved up to a central spotlight, and the majority of the adjacent rooms to this wing contain angle chimneypieces, some of which have elaborate limewood carvings applied by Grinling Gibbons and his assistants. The chapel is very dignified and quiet as regards its wainscot treatment, the ceilings being the original late Tudor vaulting, picked out in colours and gilt. In general plan these rooms, like Chatsworth, conform to the Versailles manner, with the doors facing each other, and giving a vista through the entire length of the building.

The interior has been frequently illustrated in current works, as Messrs. Belcher and Macartney's "Later Renaissance Architecture in England," and a most exhaustive history in two volumes has been compiled by Mr. Ernest Law.

J. Tijou, the eminent metal worker, was engaged there, chiefly on screens and gateways, from 1690, and issued three years later his work entitled "A New Book of Drawings" (of ironwork). He subsequently had a rival in the person of Thomas Robinson when he was engaged at St. Paul's Cathedral, London, from 1700-10.

From 1691-3 Grinling Gibbons was at work with Cornelius Austin and Caius Cibber at Trinity College, Cambridge. The Library here contains some elaborate carving with carved pierced work to the gates connecting the first bay of "classes," all of a high standard of finish.

At Oxford the dining hall of Corpus Christi College contains some simple panelling, the carving being chiefly concentrated to the cresting over the entrance doors at one end. This hall still retains its fine hammerbeam roof of Tudor days, and is lit by a clerestory of mullioned windows of the same period.

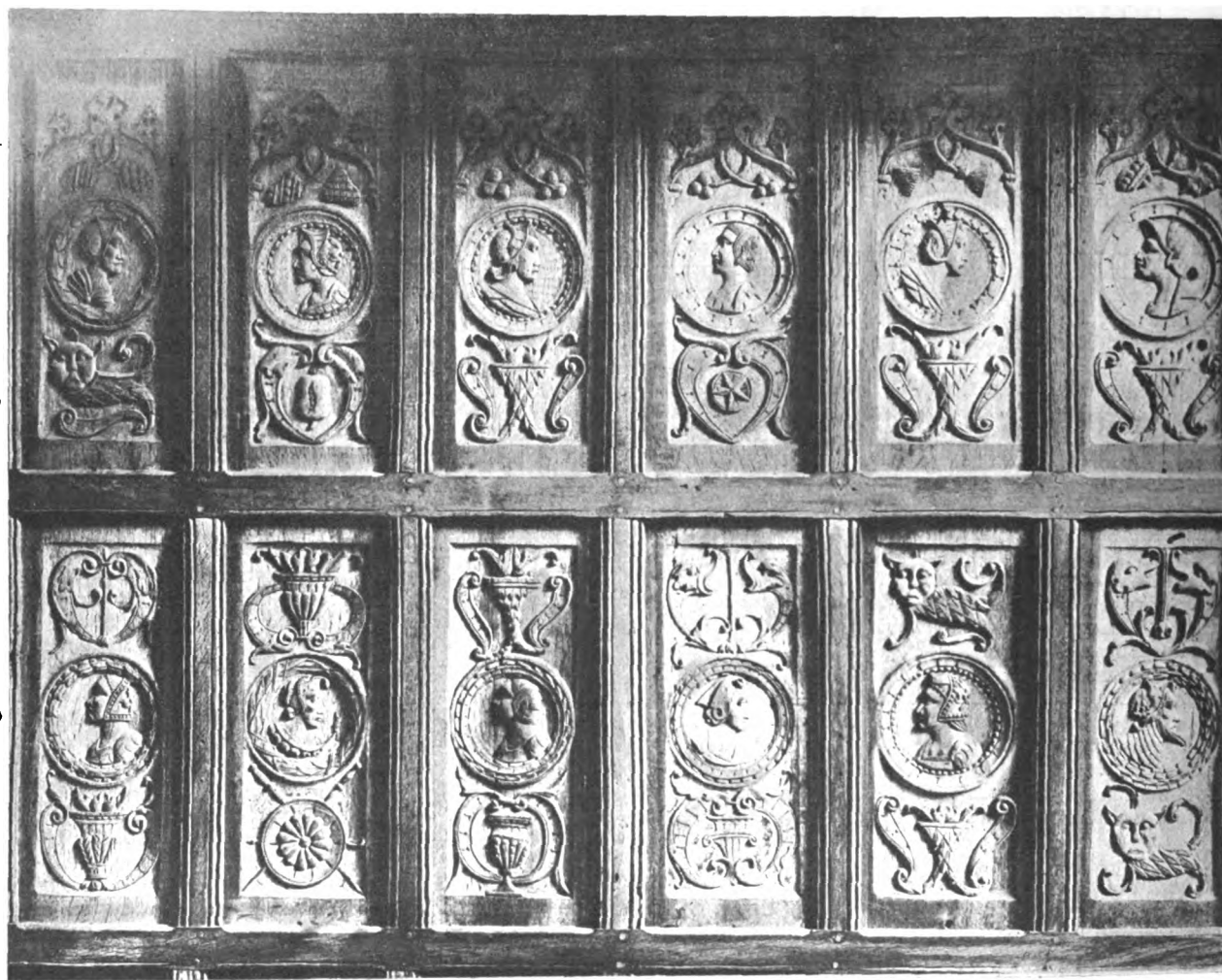
The Library of Queen's College affords a good example of the late work of the century we are describing. The decorations are not over laden, but confined to salient points where the greatest advantage and effect could be obtained. The ceiling is later than the festooned frieze, and the figures over the doorhead are well conceived. Four of the "classes" contain carved pediments with shields crowned with a bishop's mitre by way of cresting.

Stoke Edith, the neighbour of Holme Lacy, is attributed to Wren. Its quiet exterior hardly suggests the possibility of so sumptuous an interior treatment. It differs from Holme Lacy in being practically devoid of elaborate wood-carving, the decorations being obtained by the medium of the painter's brush.

The mural work of the staircase and hall suggest a French training, the architectural character coinciding with the work of Le Brun. Sir James Thornhill is associated with this work. He was born in 1675, and, being twenty-four years of age when the work is said to have been executed, had probably only just returned from his Parisian studies.

The staircase balustrading consists of twisted balusters in three heights to each stair, the newels being formed with four similar balusters grouped together. This treatment of hand-railing became very general in the early work of the following century.

Paul Foley, for whom the house was erected, died in 1699, and was succeeded by other members of the family, who had certain additions made to the decorations. The "Green Velvet Room" is tapestried with a perspective of a formal garden scene, worked by the successive wives of Thomas Foley, who resided here in 1738. The drawing-room



INTERIOR DECORATION.—PANELLING FROM WALTHAM ABBEY. (For description see page 90.)

is of the delicate carton-pierre decoration of the Adam Brothers, arranged in bordered panels to walls, and having a ceiling of the same character.

Easton Neston, Northamptonshire, erected for Lord Lempster by Nicholas Hawksmore in 1702, is a Queen Anne example. To Hawksmore is attributed the design of the Orangery at South Kensington, erected some three years later; the building was, however, supervised by Wren.

The exterior of Easton Neston is of severe Palladian type, with pilasters and columns of the Corinthian order to two storeys placed between each window. Of the interior the Long Gallery and the Great Staircase are the most successful, being carried out on the same theme as the general façade. The drawing-room suffers from a wild chaos of ideas, as though the plasterer had been permitted to adapt anything he chose and generally run riot over the walls and ceilings. It is really a most disquieting and unfortunate room to be associated with the name of Hawksmore. There is, perhaps, rather more order in the ceiling than the wall decorations, and one would like to feel assured that the latter were subsequent embellishments. That there could be so much dignity combined with such license of "L'Art Nouveau" order in a single building of its size is almost incredible, yet one is continually brought to face these contrasts of harmony and discord. The decorations of this room, having been praised elsewhere, call for some protest by way of criticism. There is, however, little necessity to trim around the subject, since a comparison with many another work of concurrent execution or previous decade will easily reveal the alternatives that were possible.

If the room was one of the last to be decorated during the possession of the house by the Earl of Pomfret, the son of Lord Lempster, it is just possible that Hawksmore's name can be relieved of the stigma the occasion demands.

The Orangery in Kensington Gardens is a pure instance of the scholarly application of this architect's work. He had not been Wren's understudy without acquiring to some advantage to himself the spirit of the master. Originally, the buildings had been based on a formal scheme, and the alcove behind the engine house of the "Fountains" at the end of the Long Water was embraced within the design. Mr. Ernest Law has found that the master bricklayer employed to contract for the work was Richard Stacey, whose

estimate of £2,599 was accepted by the officers—viz. Wren, Vanbrugh, Jackson, and Banks, who advised the Lord Treasurer to advance some of this amount. The adjacent land has now been laid out on a delightful Old English sunk garden scheme, which opens up the vista most successfully.

Within the Orangery itself the panelling is somewhat severe, but most suitable for the purpose for which it was designed. On plan it forms a long rectangle, with circular rooms at each end, and a semicircular excrescence at the rear in the centre used for storage. The sash windows are lofty and well proportioned, and the central doors are treated in the same manner, the apron pieces below the sill level being made to open to give clear access. The lime-wood carvings have, unfortunately, been whitened over, and glare somewhat at one.* The architraves and cornice are all carved in oak, and the stone trusses to the roof create the refined expression we associate with the Queen Anne period.

Good proportion, simplicity of planning, and artistic treatment devoid of affectation, combined with a suitable selection of material, was the precursor of the Georgian era.

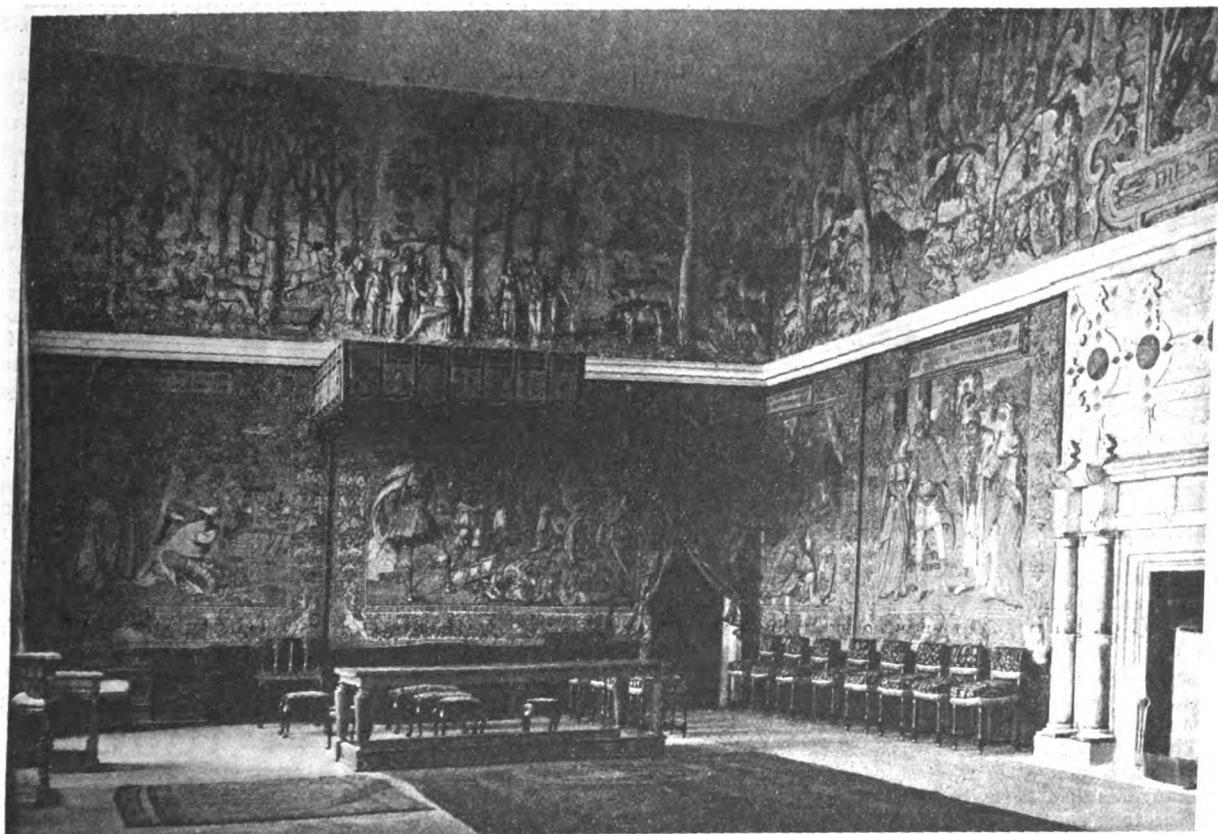
Such is the general expression of this example and many of those we have referred to, which will ever remain a credit to the architects of the time, because of its close approach to a national style in domestic architecture which has been associated with this country, and is continually being emulated abroad.

(To be continued.)

MR. BANISTER FLETCHER, F.R.I.B.A., will commence a course of lectures on "Ancient Architecture" at the British Museum on Thursday, October 3; and another course on "Mediæval Architecture" at the Victoria and Albert Museum on Monday, September 30.

MR. TEMPLE MOORE, F.R.I.B.A., has prepared the plans for alterations and additions to be carried out at the parish church, Hendon, at a cost of £6,000. The plans provide for the removal of the existing galleries and south chancel chapel, and the erection of a new nave, south aisle and vestries, a chancel-screen, and a rood-beam.

* The whole of the woodwork of the interior has now, unfortunately, been painted white for some unaccountable reason.



INTERIOR DECORATION.—THE PRESENCE CHAMBER, HARDWICK HALL. (For description see page 103.)

THE ARCHITECTURE OF LONDON HIGHWAYS.

By VIATOR.

THROUGH ONE OF THE WORLD'S VETERAN THOROUGHFARES.

CHEAPSIDE is said to be one of the oldest streets in the world; but save for this archæological interest, it does not compare with many of the thoroughfares hitherto considered in the course of these articles.

Starting from the Mansion House westwards, we have already paid regard to Queen Victoria Street; now we will, whilst starting from the same point, leave that thoroughfare working its straight course to our left, whilst we pursue a somewhat more north-westerly and devious route through Poultry, Cheapside and Newgate Street to its junction with Holborn Viaduct.

In the reign of James I., London's chief route lay along the streets just named, with the addition of Cornhill and the various connecting ways lying towards the river.

Poultry is not an interesting thoroughfare architecturally; perhaps there is too little of it, or there may be some other cause; but its separate entity (as that also of Mansion House Street) seems a mistake, an accident; a survival probably from the days when there was a congeries of streets at this spot.

The lowest-numbered block in this thoroughfare, and situated on its south side, presents a very domestic appearance above ground-floor level; the façade is an altogether unusual one, and not to be regarded as a type. Inset-bays are customarily pleasing in narrow thoroughfares, in the present instance being employed only on the first floor, thence running up as projecting oriels for the next two storeys and as flat bay-dormers over; the canted end of the block is treated somewhat differently, though still sympathetically. In No. 6 we are confronted by a building that entirely lacks distinctive architectural "style," and is indeed of indifferent merit altogether; it presents one of those framed-in façades, which are growing in favour at the present day. In the streets of the old city, there are but few, if indeed any important ones, where the battle of the styles is not waged vigorously, nor is this short thoroughfare an exception. In Nos. 7 and 8 we see a French Renaissance elevation, very quiet in mien and with a shallow square oriel as a central feature. And then, looking on the next block, we find a reversion to Gothic. Nos. 9 to 11 are treated as three dis-

tinct premises, subjected to one design, with the Pointed window-heads pleasingly varied, though the window-shafts throughout are poor and thin; the corbel-courses are satisfactory, there is no overloading with ornament, and the tout-ensemble may be approved. Nos. 12 and 13 are Tudor in style, and are good in their red brick guise with red stone dressings; whilst Nos. 16 and 17, in Renaissance garb, deserve that special regard should be paid to the central trophy of flag and shields. Mappin & Webb's interesting block has been already noticed in Queen Victoria Street, but deserves mention again here. On the north side of Poultry, in St. Mildred's House, we are confronted by a columniated block of the Corinthian type, effectively treated in the absence of much ornamentation. A succession of poor blocks will be passed by, bringing us to Nos. 39 to 42—a Gothic stone elevation with a pleasant corbel string-course; the flat façade has a restrained effect, but possesses sufficient decoration to provide the necessary relief.

Continuing our route westwards, and passing into Cheapside, the first building on the north side claiming attention is the Mercers' Hall block, the entrance to the premises of the Worshipful Company being elaborated in stonework. The whole structure is restless in effect, and indeed fussy, yet despite this we must label the frontage as a fine one. It is interesting to compare this façade with that of the Saddlers' Hall block, lower down the street, but with that we will deal presently. The animal masks inserted in the bay-window interspaces provide variation, even if their *raison d'être* is not obvious.

The occupation of an "island" site produces at once an air of completeness and dignity, but such sites are rare in the old city; this insularity is the effect given to the site occupied in Cheapside by the Atlas Assurance Company, though in truth it is but a "peninsula"; the three façades are architectural and dignified, and in fact these premises provide one of the few really architectural buildings throughout this thoroughfare.

Nos. 97 to 99, a Gothic pile in brick, may be regarded as passable, though not admirable; there is a quiet effect, however, that satisfies us, and the corbelled-out brick cornice over all is a pleasant variation from what is customarily presented to the view. The solid heads to the semicircular headed windows of the first and second floors are sound, regarded from the aspect of fitting design, though this may be a refinement of ideas not appreciated by either the man-in-the-street or the average architect.

In Nos. 103 and 104 we observe a recently-erected block,

dating back, indeed, no further than 1906; it presents a free Renaissance stone elevation of six storeys, the lowest two being architecturally treated as one storey, and though arguments may be adduced in favour of such method of design, it cannot be accorded our personal benediction. To the superstructure is introduced a shallow oriel as a decorative feature, and over all is a lantern. The ornament is slight, good of its kind, and is well distributed. The panelled pilaster-shafts to the second and third storeys are satisfactory, but we shall never approve blocked columns, this treatment being altogether a subversion of the columnar idea.

No. 111, though lacking any definite architectural style, is undoubtedly meritorious; in truth, such a comment scarcely does justice to its merits, and this despite the fact that it is but a plain façade in stone with a shallow bay to the first and second storey, and with a gable over. And its neighbour, a Renaissance model, similarly avoids thrusting itself unduly upon our notice; the blue and grey Labradorite to the ground storey, with the superstructure in red Mansfield stone proves satisfactory, though Labradorite is no favourite of ours.

Passing by some blocks lacking in interest, and where interspersed we observe that abomination, the broken-based pediment, our attention is arrested outside the King's Hall Café, whose attraction consists in the pleasant recessed shop-front to the ground and first floors in its stone and grey granite frame. The adjoining wide-stretching Saddlers' Hall block (Nos. 137 to 145) merits notice, though it fails to satisfy our artistic cravings. For if the Mercers' Hall frontage is too fussy, this of the Saddlers' Hall is too monotonous, too anæmic even, and the weak repetition of the semicircular-headed windows to three storeys is irritating. The building dates from 1823, and is a stone-fronted Renaissance block, with five storeys above the footway. Notice may be taken of the poor appearance of "parti-treatment" of the façade, as effected by pigmental decoration, making Nos. 137 to 141 seem almost a distinct block from Nos. 142 to 145, the central entrance to the Hall (No. 141) seeming at the first glance to be at the side. A semicircular-planned balcony over this entrance and the dormer at the top of the building possess as ornament the coat of arms of the Worshipful Company of Saddlers; three saddles on the shield in chevron, with horses as supporters, and with the motto "Our trust in God"; neither Saddlers' nor Mercers' compare in architectural interest with the recently-erected frontage of Cordwainers' Hall in Cannon Street.

Turning our attention to the west side of Cheapside, the first building (No. 1) is one of those restless—nay, fussy—elevations, so strangely characteristic of modern architecture; we say "strangely," because the affectation of undue simplicity is perhaps equally characteristic. In this building there seems to be no fundamental design; it is more as if the architect had proceeded on an empirical basis, a voyage of discovery. And there is so much of it too—seven storeys; so that the eye cannot but encounter it. Nos. 2 and 3 are much better; equally tall and suffering pronouncedly from the disease of blocked-out window-architraves, the effect is very different from that produced by No. 1; it is, in fact, a quiet block that merits attention, with its symmetrical gabled flanks connected by the substantial entablature to the central portion, and the flat oriels running through three storeys of these flanks please us. The columnar treatment would be better if the end columns had been coupled. Mr. Delissa Joseph has designed in Nos. 4 and 5 a quiet and inoffensive, even if not an admirable, building; an entrance on a circular sweep is always apt to prove unsatisfactory, more particularly when a circular head to the doorway is provided. The kangaroo keystones were not, we believe, an original feature, but their later introduction, when the building was taken over by Australasia, is to be approved. The carving generally is passable, and the looped swags look well.

Very many of the blocks on the south side of the thoroughfare must be passed over unnoticed; not that their poverty is of necessity thereby implied, but the impossibility of scheduling all the buildings will be manifest. Before Nos. 46 and 47 we will, however, arrest our steps, as this is a very unusual frontage. Gothic in red brick, with sparse stone courses, and without dressings as usually understood, the façade pleases; the eastern portion of the south front rises two additional storeys in a gable, adorned with animals as acroteria, and the western elevation is also gabled. The arcaded treatment of the façade is nicely varied, and altogether this is a building which we can always regard with pleased interest. Its neighbour is also modern Gothic of the Early English style, over-ornamented, perhaps, but

certainly not to be passed by unnoticed, with its open arcading, its tile slopes and water-tables and its statues.

And then, disregarding one block, we will observe No. 50, which contrasts vividly with the one last noticed. Here we see free Roman Doric with bucrania and swags, the superstructure having Corinthian pilasters, embracing three storeys. An unusual feature is the alternation of vermiculated blocks to the lower portion. The Aerated Bread Company built the adjoining premises, and introduced its monogram on the façade; it is a good and quiet elevation.

Two works of Sir Christopher Wren's will claim attention in the course of this article, the first being the church of St. Mary-le-Bow (1680), a masterpiece of Art and all-compelling in the admiration it attracts. It is fine, graceful, dignified and picturesque, with the combined Gotho-Renaissance feeling that Wren introduced into much of his ecclesiastical work. The entrances in the tower on the south and west faces have Roman Doric treatment; the co-operation of Grinling Gibbons was never happier than in this church, where the cherubs' heads, the trails of fruit and the amorini are all delightful. If at times Wren's work depended for its effect upon Gibbons' contributions, it is not the case here, any more than at St. Paul's Cathedral; indeed, were there dependence in either building it would be more so at the cathedral than the church. The tower is finely proportioned, and is a good admixture of repetition and contrast; the portal stage is very lofty, and this is surmounted by clock belfry and stair stages, the spire being topped by the City dragon. The method of setting the actual entrances in a cavetto framing is effective, and the charming cherubs' heads in the metopæ is a most unusual feature and equally attractive.

No. 60 Cheapside provides a point of interest in the particular variety of treatment of the inset three-storey bay-windows with the rounded connection at the extreme angles. Sir John Bennett's premises merit notice by reason only of their singularity; the façade is poor, and so is the carving. What prove most attractive (though not most pleasing) are the hideous effigies of Gog and Magog, and what is most pleasing (though perhaps not most attractive to the public) is the fascia with its dark mosaic lettering on dull gold mosaic ground.

No. 73 is attributed to Sir Christopher Wren, but were this not the case we fear it would not arrest our gaze. It was built in 1669 for Sir William Turner, Lord Mayor; the best features are the main cornice and the carved surmount over the entrance, the ladies seated on the curved haunches of the pediment looking less uncomfortable than such a position warrants, through having their feet supported upon blocks at the base.

And after this, still strolling westwards, we see some of those designs which stand on the borderland between good and—we will not say "bad," but simply—not good; sufficiently uninteresting to induce our steps to wander westwards again beyond Peck's fine statue, until we enter Newgate Street.

Too soon—perhaps even before the appearance of this article—there will have disappeared from the public view one of the fine erections of the nineteenth century; we refer to Sir Robert Smirke's inspired block, the original St. Martin's-le-Grand, dating from 1829. It is in the Grecian Ionic style, so far as the "order" is concerned; a plain building, unrusticated and unadorned, save by the magnificent western portico, upon which and the well-studied proportions of the edifice the merits of the work depend. The Post Office block on the opposite side of St. Martin's-le-Grand and flanking on Newgate Street is more modern by nearly half-a-century, Mr. James Williams (of H.M. Office of Works) having been responsible for it in 1870-74; it is not of the same level of merit as the one previously described, and, as regards this quality, is indistinguishable from a large number of works, whereas Smirke has produced something unique, just as the Bank of England, the Natural History Museum, the Albert Hall, and Kensington Palace are unique of their respective kinds. But Mr. Williams' building is dignified and expressive, and gains in both dignity and expression by reason of the spare use of ornamentation.

Further westward in Newgate Street is the new General Post Office (King Edward's Building), the work of Sir Henry Tanner, official architect, and dating back to 1906. This has an interest all its own in modern construction, being one of the earliest examples (we believe, indeed, the earliest) in London of the use of reinforced concrete, the particular system employed being the Hennebique. This being so, it is obvious at once that we are confronted by a sham, a counterfeit stone-constructed, where it is in reality but a stone-faced building; and, consequently, the artistic interest

MODERN EUROPEAN ARCHITECTURE.
SPAIN.[From *Arquitectura y Construcción*.

DETAIL OF FACADE OF THE EAGLE HOUSE, BARCELONA.—Don JOSÉ PLANTADA, Architect.

attaching to the original is entirely lacking in the latest block. It is to be hoped that as time and tide move on they will bear on their bosom a considered artistic development of the new method of construction, even such as we are hoping that engineering will exhibit in time. As it is, Sir Henry Tanner has produced pleasing elevations both to Newgate and King Edward Streets (the latter, unlike the Post Office, named after King Edward VI., not King Edward VII.). The architect may be congratulated upon carrying on the traditional treatment for Post Office work, whilst adapting it to more modern conceptions.

If we desire to observe the negation of columnar design in full blast, let us regard Nos. 89 to 93 in Newgate Street, where the London City and Midland Bank premises sport in uncolumnar columns and also (incidentally) in broken-based pediments. The Elizabethan design of Nos. 115 to 117 is passable in its admixture of stone, brick and terra-cotta.

The Central London Railway (no longer, alas! the "Two-penny Tube"!) provides us in this thoroughfare with our first opportunity of comment upon its stations. The buff terra-cotta booking-halls and exits, which characterise the treatment on the Company's line, do not prove greatly attractive, though the desired object is doubtless satisfied commercially, and the station designs are quite respectable and

expressive. As regards the Post Office Station superstructure, the work of Mr. Delissa Joseph (one of London's busy commercial architects), this again is doubtless all that is required and desired, but it is quite uninspired.

For the most part the elevations on the south side of the thoroughfare are either poor or, at best, indifferent; but Nos. 2 to 5 provide a quaint modern façade that pleases with additional emphasis, by reason of its surroundings. The shop fascia treatment is unusually good, with its projecting cornice, and the decorative display of amorini holding swags is satisfactory.

We now confront the last building to be reviewed in this article—a building than which there is nothing superior in the procession of the centuries witnessed by us, though Bow Church of the seventeenth and St. Martin's-le-Grand of the early nineteenth are the compeers of the Central Criminal Court of the early twentieth century. The late Mr. Edward Mountford was just the man to produce such a design; he looked the part of a dignified Renaissance, even Classic, designer, and his work was ever thoughtful and dignified. In this building he was at his highest level; there are, it is true, defects both internal and external, but the external ones, at any rate, are so relatively unimportant when compared with the design as a whole, that we do not choose to

dwelt upon them. The proportions are good, the distribution of parts and of ornament is good, the carving is good; it is a pity that old Newgate Gaol (a building full of artistic interest) had to disappear, and there is some sentimental satisfaction in knowing that very many of its stones have been re-used in the new building. But as Newgate was doomed to follow where so many of its temporary tenants led the way, it is well that the present remarkable edifice should have risen, phoenix-like, to take its place and to carry on its architectural tradition.

VICTORIA AND ALBERT MUSEUM.

THE Department of Engraving, Illustration and Design of the Victoria and Albert Museum has recently acquired, by purchase, a large number of original studies by the late Frederick Shields, for his well-known illustrations to Bunyan's "Pilgrim's Progress." They have been mounted with the wood-engravings to which each group relates, and a selection of about ninety is now exhibited in Room 70. This series, with a set of drawings for Defoe's "Plague of London," some of which are now in the Manchester Art Gallery, constitute Shields' chief contribution to the great period of English book illustration, the "Sixties," and when published they received high praise from Rossetti and other artists, as well as from John Ruskin. The same room also contains two original pen-drawings by the late E. A. Abbey, R.A., for "She Stoops to Conquer" (1885) and "The Quiet Life" (1889), given to the museum by Mrs. Abbey in memory of the artist, as well as another study purchased for the collection, which is thus enriched with a representation of the work of one of the most distinguished of the pioneers of modern methods of illustration. Mr. Stanhope Forbes, R.A., has given eleven etchings by the late Mrs. Stanhope Forbes, whose graceful and accomplished work in this medium, belonging to the earlier period of her artistic career, is by no means as widely known as it deserves. Among other recent accessions, wholly or in part, now exhibited are four drawings by the late L. R. Garrido (1868-1909), given by Mrs. Garrido; a collection of twenty-one working proofs, &c., of etchings by the late David Law (1831-1902), given by Miss Law; two etchings by Mr. D. Y. Cameron, A.R.A., "Rameses II." and "The Lion and the Unicorn," given anonymously; and four studies by James Ward, R.A., given by Mr. A. E. Anderson. Four studies for "The Harvest Moon" and other pictures, by G. H. Mason, A.R.A., have been purchased, and are also shown.

IRON AND STEEL OF ANCIENT ORIGIN.*

SECTION A.—INTRODUCTION.

THE use of iron, including in this term the combination of iron and carbon known as steel such as produced by the fusion or cementation processes, has, without doubt, existed from a time dating back to a very early period in the world's recorded history.

Owing, however, to the avidity of the oxygen present in the air for this metal, it has been most difficult to obtain ancient specimens of iron. We have, therefore, but little definite evidence regarding its early manufacture and use.

We who live in this modern Western world are apt to pride ourselves that we have all the knowledge on this subject of metallurgy, but the facts presented in this paper show this assumption to be incorrect. Whilst information available from the East regarding iron of ancient production is fragmentary, yet undoubtedly a comparatively high state of metallurgical art and knowledge must have prevailed not only centuries, but more than a thousand years ago.

The term "Sinhalese" is explained as follows by Dr. S. M. Burrows, M.A., in his book "Buried Cities of Ceylon": "In B.C. 543, Wijiyo and his Sinhalese followers landed in Ceylon, possibly near the modern Puttalam on the west coast. He is said to have been the discarded son of one of the petty princes in the valley of the Ganges, while the native chronicles explain the name of his race by tracing his paternity to a lion—'Sinha.'"

This is not the first paper which has been read on this subject. One hundred and seventeen years ago—to be exact, on June 11, 1795—Dr. George Pearson, a Fellow of the Royal Society, read a paper entitled "Experiments and

Observations to Investigate the Nature of a Kind of Steel, manufactured at Bombay, and there called Wootz, with Remarks on the Properties and Composition of the different States of Iron."

It was the author's good fortune during his recent tour round the world to visit the Colombo Museum and inspect a set of ancient specimens of iron and steel which were obtained from some of the buried cities of Ceylon. These cities date back from about 500 B.C., and since then have had a more or less continuous history as habitable by human beings; the history of some of them continued up to about 1500 A.D.

This collection, which was formed quite recently, and has not been previously known or described, was lighted upon quite by chance, and was the find of an otherwise idle day. It is a fascinating collection of ancient specimens and instruments of iron, and is in many respects absolutely unique.

Not only does the Colombo Museum contain this large number of interesting specimens of ancient tools and implements of various kinds—some 250 in number—but in another section of its exhibits are shown several swords of more modern date, bearing the dates of the years 1374 and 1416 A.D., with Sinhalese legends inscribed upon them.

To those interested in the metallurgy of iron and steel, this collection of ancient iron and steel specimens appeals as being without doubt the most complete and unique in the world. There is probably nothing at all like or approaching it in any other museum or private collection.

Whilst there is often an impression that the use of iron, including in this term the alloy of iron and carbon known as steel, is a modern development, this is probably incorrect, as without doubt such knowledge really dates back to the earliest stages of tradition. For several reasons it has been difficult to obtain ancient specimens of this material, more particularly in the form of steel. It is for this reason that the Sinhalese specimens in question are so valuable, for there exists but little definite evidence as to the period when iron and steel were first employed by man.

There is a reference in the report of the Director of the Colombo Museum to the fact that iron implements are very liable to rust even in the atmosphere of Ceylon, with its constant high temperature, and even after having been cleaned and impregnated with paraffin wax by Krefling's methods. Rust preservatives are, therefore, used in the museum from time to time as rust appears; the simplest way has been found to give the specimens a coat of the above varnish.

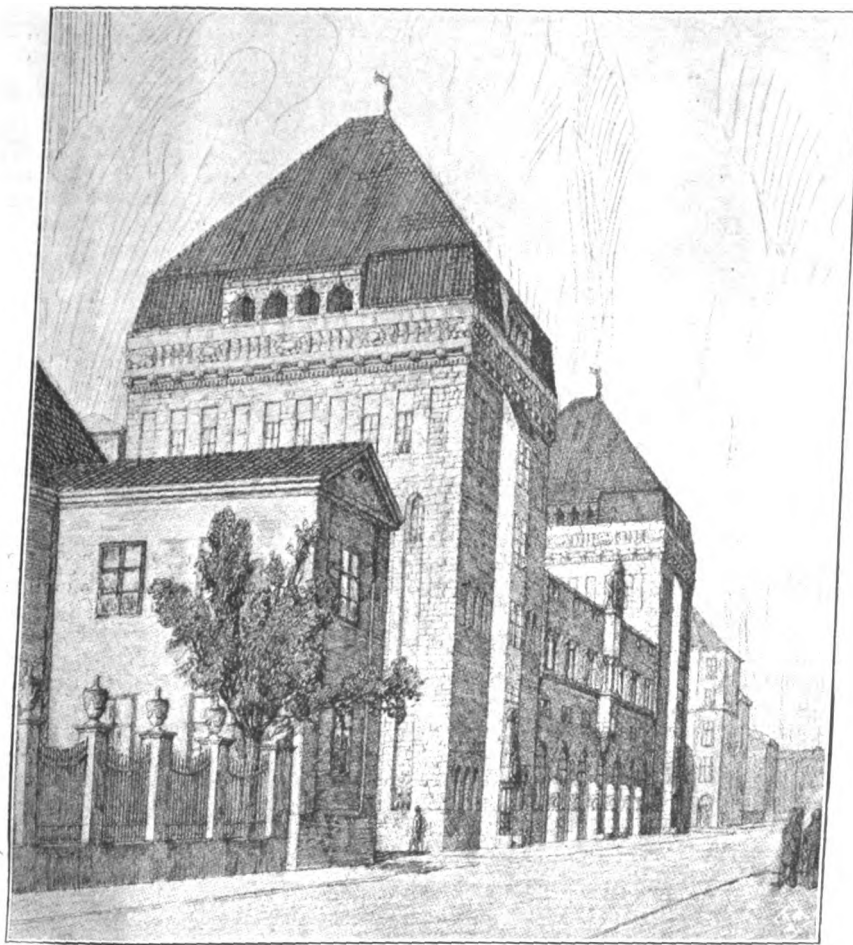
The importance of this subject was recognised by Dr. A. Willey, F.R.S., the Director at the time of the author's visit to Ceylon, and in his annual report he expressed the hope that more of the long steel stone-cutting chisels would be found during the course of the archaeological survey operations, so that further examination could be made. It was also stated in the report that the ancient Indian method of making steel in clay crucibles seems to be identical with the method thought to have been invented in England in the middle of the eighteenth century.

Another reason which caused the author as a metallurgist to be specially interested in these Sinhalese specimens was that during his tour in the East he first visited Egypt, and an inspection there of the wonderful works in stone raised questions in his mind as to the method and tools with which these memorials in stone were hewn to shape.

It has been asserted that the Egyptians knew how to harden copper so that it could be made to take and keep a cutting edge under the severe working stresses to which the tool must have been subjected in order to produce the hundreds of thousands of forms now to be seen in the Nile Valley from Cairo to Khartoum or beyond, over a distance of some 2,000 miles. Such work must have involved the labours of immense numbers of stonemasons, who would require tools. The author is strongly of opinion that no method of hardening copper was then known which would produce tools having a hard cutting edge, or which were at any rate at the same time tough enough to stand the severe impact blows such as stone-cutting work required. Copper alloyed with other elements can be hardened, and it is said that a turning tool has been made which had cut iron. The author is of opinion, however, that such a material made up into chisels, wedges, and the like would be of little value for hewing to shape and finishing the gigantic works in stone of the Egyptians.

It is far more probable that the ancient Egyptians were not only able to make steel for tools of all kinds, but also to cement and harden it, or, if they were not themselves steel-

* Abstract of a Paper by Sir Robert Hadfield, F.R.S. (Sheffield), entitled "Sinhalese Iron and Steel of Ancient Origin," read before the Iron and Steel Institute at the annual meeting.

MODERN EUROPEAN ARCHITECTURE.
NORWAY.[From *Arkitektur og Dekorativ Kunst*.

FIRST PREMIATED DESIGN FOR NEW POST OFFICE, CHRISTIANIA.—Mr. OLAF NORDHAGEN, Architect.

workers, they obtained the necessary material and help from the workmen of another nation. There is, indeed, evidence that such was the case, and the facts available suggest that in the art of steel-making Egypt received assistance from India or China. There are, it is true, but few specimens of iron or steel tools or implements in and from Egypt. There is, however, a scythe of iron in the British Museum; examination shows it to be in such an oxidised condition that it is not possible to say definitely what is the nature of the material, although it is undoubtedly iron. This scythe, which the author has seen and handled, is so thin and corroded that it would almost fall to pieces unless most carefully dealt with. There is also an important specimen of iron taken from the Great Pyramid. In determining this general question as to the use of steel by the Egyptians, it should be remembered that there are several ways of endowing iron with the quality of hardening—that is, after heating and quenching it in water, or other cooling medium.

As before mentioned, the specimens in the Colombo Museum were taken from the ruins of some of the buried cities of Ceylon.

The names of the buried cities in question are Anuradhapura, 437 B.C.-769 A.D.; Polonnaruwa, 769 A.D.-1319 A.D.; and Sigiriya, 479 A.D.

Whilst the Sinhalese temples and monuments are of much later date than those of Egypt, nevertheless, in view of the metallurgical knowledge which was evidently possessed at a very early period in India and later in Ceylon, it is quite evident that the knowledge then prevailing in these matters must have been considerable. There is no evidence that the metallurgy of iron was understood in Egypt; it seems more than likely, therefore, that, as has been suggested by several authorities, aid was obtained by the Egyptians from the Far East—no doubt India or China, whence there was a constant stream of trade and commerce. They were thus enabled to carry out their many wonderful works in stone, including temples, pyramids, statues, obelisks, sarcophagi, sculptured walls, figures, tombs, steles, and the like, many of them prepared from the intensely hard

Assouan granite, also red and black granite, quartz, porphyry, limestone, and sandstone. Some of the hieroglyphics have been found cut to a depth of no less than 2 inches. To carry out such work would require tools of excellent quality.

At Colombo there are several hundreds of these ancient iron specimens. They comprise large and small chisels, including stone-cutting chisels, about 2½ inches in length and ½-inch in diameter, axes, adzes, hoes, wedges, scissors, locks, keys, and many other articles. As regards the age of the specimens, Dr. Willey, F.R.S., the Director of the museum, states that this is vouched for by those thoroughly competent to make the statement and that the specimens are 1,200 to 1,800 years old. They are in a remarkably good state of preservation, and many of them, being quite bulky, offer much better scope for examination than anything of the kind the author has ever seen or heard of.

When considering the origin and nature of these specimens, it should be borne in mind that the "Veddars," the aboriginal hunting caste or hill tribe of Ceylon, were of very poor intellect, and it is extremely doubtful whether the high order of knowledge necessary to produce steel, and particularly steel by the crucible process, could have been possessed by them.

Ceylon, is, however, from the ethnological point of view, practically an integral part of India. The distance between the two countries is so small that it is shortly to be spanned by rail. There seem, therefore, good grounds for the assumption that the requisite skill and knowledge required for steel-making probably reached Ceylon from India.

(To be continued.)

OUR CONTEMPORARIES FROM OVERSEAS.

The *American Architect* (New York) publishes a report in part of a speech delivered in the United States Senate by the Hon. Francis G. Newlands, of Nevada, the gist of which is that the cost of preparing plans and specifications for new buildings in the Government architect's office is 6.02 per cent. on the cost of the buildings, or more than the 6 per cent.

which is now the recognised charge for architects in private practice, who for that charge include superintendence during the erection, whereas the expense of the Government's official staff does not include any cost of superintendence. Illustrations in our contemporary include residence and gardens for Robert Saltonstall, Esq., at Milton, Mass., by Messrs. Bigelow & Wadsworth, and a variety of domestic work by Messrs. Duhring, Okie & Ziegler.

Der Architekt (Vienna) contains designs for dwelling-houses and shops at Wels, a Rathaus at Rottenmann, a synagogue at Ofner, an evangelical church at Vienna, and the stage scenery for Shaw's "Cæsar and Cleopatra" at the Hofburg Theatre, Vienna.

Arquitectura y Construcción (Barcelona) illustrates houses in a garden suburb at Villanueva, near Barcelona.

Bauwelt (Berlin) shows "How (German) architects build their own homes" by views of the houses designed for themselves by seven different architects.

La Construction Moderne (Paris) illustrates some more examples of Parisian façades premiated in 1911.

Deutsche Bauzeitung (Berlin) gives further illustrations of the Hamburg overhead railway; competition designs for a garden and art exhibition in the grounds of the Festhalle at Frankfurt-on-Main; the two new Royal Court theatres at Stuttgart.

The Pacific Coast Architect (Portland, Oregon) shows once again that good architecture in the States is not confined to the east. Multnomah County Court House, by Messrs. Whidden & Lewis, of Portland, Oregon, is an admirable Classic Greek design, and a house at Portland by Mr. Wade H. Pipes is a charming cottage.

Stone (New York) has some good bits of detail of fourteenth-century work at Messina, and an interesting illustrated article on colossal statuary.

The Western Architect (Minneapolis) has a full series of illustrations of the first premiated design for the Commonwealth of Australia Federal Capital competition, and also of other works by the prizeman, Mr. Walter Burley Griffin.

NOTES ON BOOKS.

"The Preparation and Uses of White Zinc Paints." By Paul Fleury. Translated from the French by Donald Grant. With thirty-two tables. (London: Scott, Greenwood & Son. 6s. net.)

As it is quite within the bounds of possibility that we shall before long be legally forbidden to use white lead as a basis for paint, it is desirable that we should have the opportunity of learning the capabilities of white zinc and the special points that have to be taken into consideration in order that it may be satisfactorily used as a basis for general painting.

There can be no doubt that white zinc has many excellent qualities of its own, but at the same time it is also certain that it requires its own appropriate treatment, and that the painter who has been used all his life to the handling of white lead has something fresh to learn when he has to substitute white zinc. As by the French Act of July 20, 1909, the use of white lead has been interdicted in all paint work of buildings, it is natural that careful consideration has been given in France to the important points relating to white zinc, and in the work before us by M. Paul Fleury we have well explained the differences both in the proportioning of material and in the handling that are necessary when white zinc has been adopted as the basis of paint, for, as the author points out, the technique of laying on paint differs with white zinc from that which the painter is accustomed to use with white lead.

Interesting chapters in the book are those dealing with the experience of the Dutch Commission officially appointed to make comparative trials between white lead and white zinc and the author's criticisms of these experiments.

The value of M. Fleury's work is enhanced by critical notes by his translator, Mr. Donald Grant, particularly with respect to the author's chapter on the analysis of paint.

COMPETITION NEWS.

CANADA.—The first place in the competition for designs for the proposed Legislative and Executive Building at Winnipeg has been awarded to Mr. F. W. Simon, F.R.I.B.A., of Liverpool. The cost of the work was estimated by the promoters to be £400,000, exclusive of heating, lighting, plumbing, &c.; and a fine open site of about 1,000 square feet has been set aside for the building. The competition, which was open to all architects practising in the British Empire who were British subjects, was in two

stages, and Mr. Leonard Stokes, President of the R.I.B.A., acted as assessor. After the preliminary competition the following five architects were invited to take part in the second stage, and received an honorarium of 2,000 dollars each: Mr. F. W. Simon, F.R.I.B.A., Messrs. E. & W. S. Maxwell (Montreal), Messrs. Sharp & Murray (Toronto), Messrs. Brown & Valland (Montreal), and Messrs. Clemsha & Portnall (Regina, Sask.).

CARLISLE.—The Carlisle Education Committee have adopted a recommendation that local architects who have been practising in the city since January 1, 1912, should be invited to submit competitive designs for a proposed school at Newton to accommodate 400 children. The premiums offered are £75, £30, and £20. The Royal Institute of British Architects will be invited to nominate an assessor.

GOOLE.—Mr. C. B. Flockton, F.R.I.B.A., of Messrs. Flockton & Gibbs, of Sheffield, has been appointed assessor of the competitive designs submitted for the proposed municipal offices at Goole. The designs were sent in on September 1.

MACCLESFIELD.—The committee of the Conservative Club have awarded the first premium of £50 offered for designs for new premises to Mr. J. E. Burgess, Cumberland Street, Macclesfield. The second premium of £25 goes to Messrs. Hall & Fawcner, Macclesfield, and the third of £25 to Messrs. Woodhouse & Dean, Manchester. The assessor in this competition was Mr. G. K. Keighley, of Burnley.

WALES.—The Llandudno Council, at their monthly meeting, confirmed the decision arrived at in committee to offer a prize of 50 guineas for the best design for the laying out of the portion of the Happy Valley recently presented to the town by Lord Mostyn, together with the "Wyddfyd" property at the top of the valley which the Council purchased a year ago.

WORCESTER.—The Education Committee on Monday last decided to invite competitive designs for a Council School to accommodate 750 scholars, to be erected on the site of the skating rink in the Arboretum. The competition will be limited to Worcestershire architects, and Mr. H. T. Buckland, Lic.R.I.B.A., of Birmingham, will act as assessor.

WE are glad to hear that the Lords of his Majesty's Treasury have appointed a committee to consider the question of modifying or maintaining the lines of Mr. Norman Shaw's Regent Street façade of the Piccadilly Hotel in completing the rebuilding of the Quadrant, Regent Street. The members of the committee are:—The Earl of Plymouth, C.B. (chairman); Sir Henry Tanner, C.B., I.S.O.; Mr. Reginald Blomfield, A.R.A., president, Royal Institute of British Architects; and Mr. John Murray, F.R.I.B.A. The secretary to the committee is Mr. Walter Fidler, of his Majesty's Office of Woods and Forests, 1 Whitehall, S.W.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Intercepting Traps.

SIR,—I have just been reading your interesting leader on this subject, and hope shortly to try and absorb what the Departmental Committee has issued in its report.

Personally, I am one of the stalwarts in favour not only of retention of the interceptor, but also of a non-diminution of its diameter.

Quite recently I have had most valuable and direct testimony as to the intimate connection between a trapped-off sewer and the consequent barrage of rats from the house drains. The rodents were making a free run up the house system (their paw marks being evident in the different chambers), and on examination it was discovered that the sealing-off cap to the cleaning-eye of the disconnector was absent. This defect being remedied, the rats, previously frequent visitors, have not since been seen at all.

I think the idea of diminishing the sectional area of the trap is deplorable; for when we remember the carelessness of the average householder and serving-maid, we need to give every facility for scrubbing brushes, clothes pegs, and other household requisites to pass freely into the sewer.

We live in mad times, but I had not expected quite such an exhibition of madness as this in connection with disconnections.—Faithfully yours,

PERCY L. MARKS.

September 25, 1912.

The Architect.

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FORTHCOMING EVENTS.

Monday, October 7.

Society of Engineers : Paper on "Town Planning from an Engineering Aspect." by Mr. E. R. Mathews, A.M.Inst.C.E., F.G.S., at the Institution of Electrical Engineers, at 7.30 P.M.

Wednesday, October 9.

Manchester Society of Architects : Presidential Address by Mr. John Brooke, F.R.I.B.A., at the Society's Rooms, at 6.30 P.M.

Thursday, October 10.

London University : Course of Lectures on "French Renaissance Architecture by Mr. W. H. Ward, M.A., F.R.I.B.A., at University College, London, at 6 P.M. (1) "Introductory. The Renaissance in Italy and other Countries."

Friday, October 11.

Institution of Municipal Engineers : Annual General Meeting at 4 Southampton Buildings, W.C. (two days).

REGENT STREET QUADRANT.

As we mentioned last week, we are glad that a committee has been appointed to consider the design which is to be adopted in completing the rebuilding of Regent Street Quadrant, already commenced by the erection of the Piccadilly Hotel, with a façade designed by Mr. R. Norman Shaw, R.A.

The genesis of the committee is, of course, due to dissatisfaction that has been expressed with Mr. Norman Shaw's design. It is admitted even by those who are dissatisfied that the Regent Street front of the Piccadilly Hotel is a masterly piece of architectural composition, but it is objected that there is too much stone and too little plate glass for proper display in shop windows and for the exercise of the art of window-dressing by tradesmen who wish to attract customers.

We think that this objection on the part of businessmen is chiefly the result of a misconception based on the conditions and method of shop treatment to which they have become accustomed.

The shopkeepers of the eighteenth century did not find it necessary to expose a large expanse of their goods to the passers-by in order to attract custom, and still they managed many of them to acquire fortunes in trade. The modern window-dresser has become accustomed to exercise his art on a large surface, and he has come to believe that it is only when he has a large canvas in front of him that he can draw an attractive picture. But because the genius of one painter demands a surface of great area for its free exposition it does not follow that there is no room for beauty in a miniature. Indeed, we may go further than this and say that it is highly probable that the shopping public has become *blasé* in the matter of plate glass and unrestricted display of goods, and that it might, from a financial point of view, be better business for a shopkeeper to adopt a gem-like treatment in his window dressing, and allow his gems the advantage of an appropriate architectural framing. There is plain evidence in the frantic attempts made by window-dressers to introduce new and startling effects that the unrestricted expanse of plate-glass is not so potent in arresting attention as shopkeepers have been educated to believe.

Extensive display invariably diminishes the preciousness of the things displayed. A plateful of diamonds or emeralds or pearls has little beauty, still less a mixed plateful. A single diamond in a fine setting is worth, from the point of view of beauty, all the stones of Kimberley in a heap. Extensive display is characteristic only of barbarism.

There is another point about the display of goods which we think has been overlooked by shopkeepers—

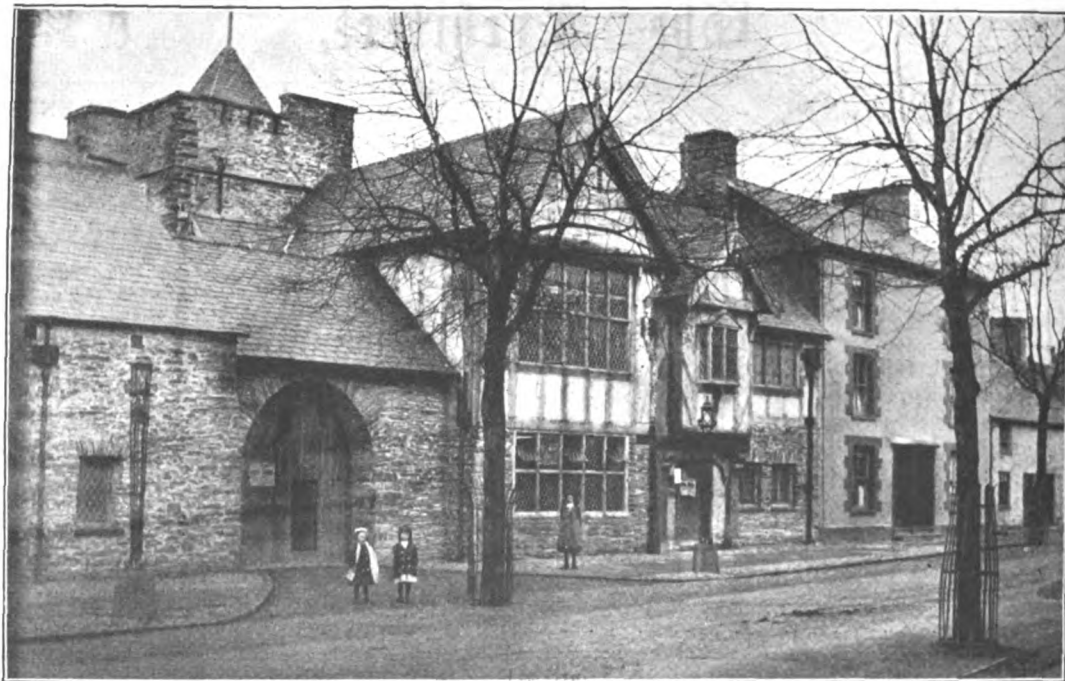
the principle that the half-revealed excites curiosity and arrests attention far more than a full display. And it would be a policy worth trying to attract people into a shop by a suggestion of other and even better things inside, rather than, by putting everything into the front window, or at any rate seeming to do so, to give a possible customer a chance of having a look and passing on. Thus we are inclined to think that, even from a business point of view, the treatment of the Regent Street front of the Piccadilly Hotel is sound. We do not believe that the shop windows at present occupied in that front are unattractive, nor that they are less likely to catch a chance customer than the square yards of plate-glass which are found in other Regent Street frontages.

We cannot, of course, forecast what may be the decision of the committee appointed to consider the question of the design, but it may at least be predicated that the eminent architects constituting that committee will have due regard to the financial interests of the Crown and its tenants, as well as to the claims of the art of architecture, and we say this because they are eminent architects—that is, they are the right combination of artist and business man.

From a general point of view, the whole incident is one more deplorable example of the incapacity of our authorities, as at present constituted, to deal satisfactorily with the architecture of our London streets.

Regent Street and Piccadilly seem likely to be added to the roll of thoroughfares which, like Kingsway, have started with good intentions for dignified and harmonious architectural treatment, and ended in our characteristic English fashion in a patchwork of charming but incongruous bits.

When the subject of the rebuilding of Regent Street was discussed in the House of Lords some seven years ago promises were made of a continuity of architectural treatment, and a design for the whole frontage was, as our readers are aware, prepared by Mr. Norman Shaw. Now Mr. Shaw's design is in danger of being mutilated both in Regent Street and in Piccadilly. So with Kingsway; a competition between a number of eminent architects was held, and a design was selected as the best. But in neither case have the authorities been strong enough to carry through a scheme of continuous architectural design in the face of the opposition of tenants and owners of property. It is a question open to discussion and difference of opinion as to whether it is after all desirable that the architecture of a street should have an uniform character. There are, no doubt, artistic qualities which can be obtained by such uniformity, and in no other way. On the other hand, there are artistic



OWAIN GLYNDWR'S PARLIAMENT HOUSE.—VIEW OF NEW BUILDING FROM ROAD.

qualities which are not necessarily produced by such uniformity, and may even be destroyed by it.

Thus there may be a legitimate difference of opinion and of taste as to which of those qualities are to be allowed to predominate, but it is high time that Englishmen made up their minds as to whether in any particular instance a street is or is not to be endued with an uniform character of design. It is simply making ourselves ridiculous to start a design intended to be carried throughout a whole thoroughfare and then to fail in its accomplishment because before it was adopted sufficient attention has not been given to the circumstances. To attain uniformity of character in the design of a thoroughfare all the requirements, and even the whims, of those with vested interests in the various properties must be considered and co-ordinated before a design is made to which the different owners and tenants may be expected or constrained to conform. The Piccadilly front of the Hotel was designed on a definite understanding that its design would be completed on adjoining property, but apparently without regard to the exigencies of that property. Now it is a pig with one ear, and seems likely to remain so, a monument of English stupidity and muddle.

We badly need an authority who will take charge of the architecture of our streets, an authority possessed of sufficient intelligence, ability, and foresight to make a wise decision as to what can and what cannot be done before any scheme is approved and started; and this authority must not only be wise but powerful, and able to enforce its decisions. At present we seem to get nothing but unwise decisions incapable of being enforced. The London County Council found themselves unable to maintain a uniformity of character of design in Kingsway, and even the Crown, with all its power, appears to be dubious as to the possibility of carrying through a scheme of which its present and prospective tenants disapprove, no matter whether the disapproval is founded on good grounds or not.

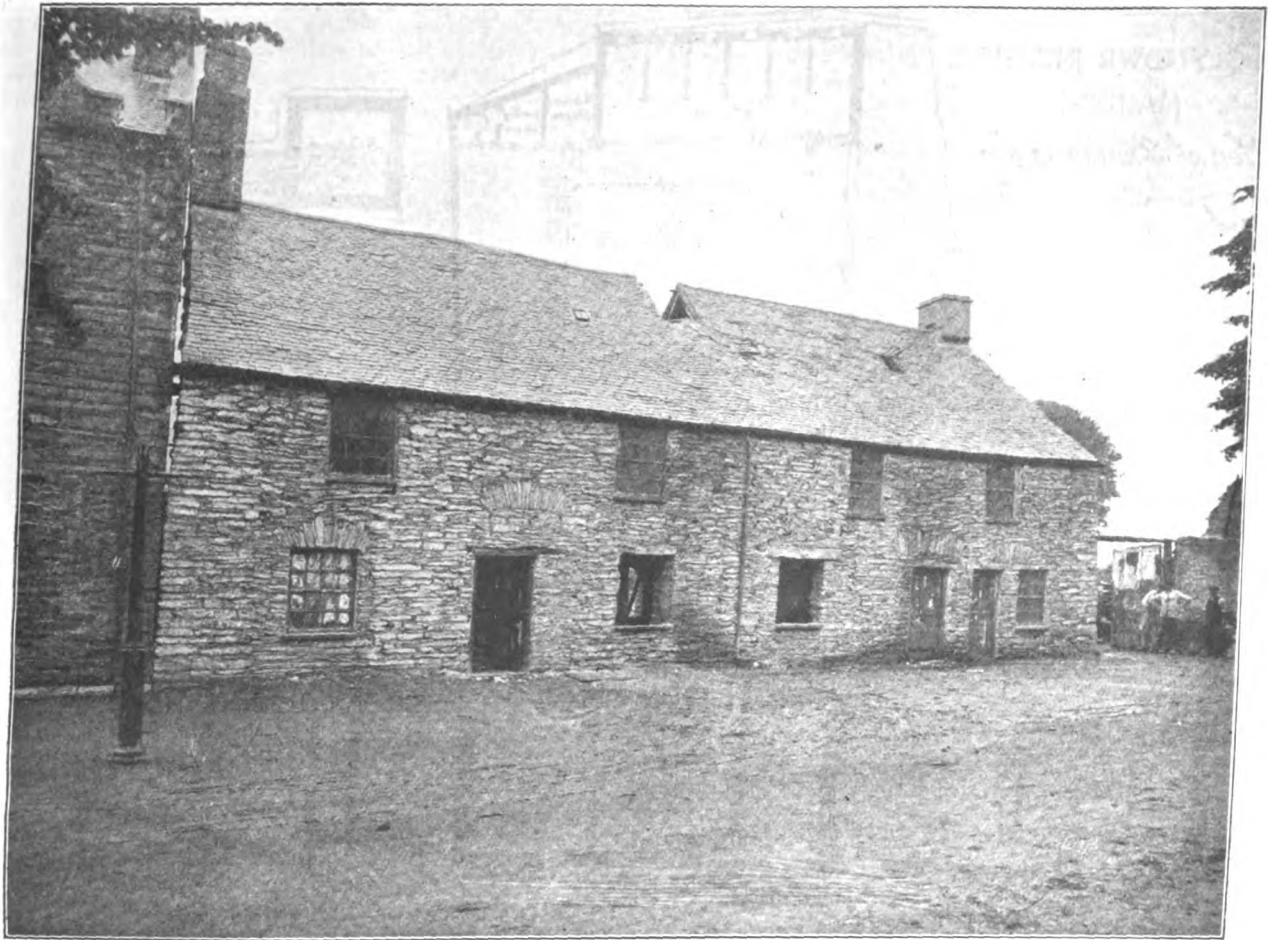
NOTES AND COMMENTS.

THE trouble at Philæ is but one more illustration of the struggle that is ever going on between the useful and the beautiful. It is vain to expect in these days, or indeed in any days, that the benefits to a country such as those which will ensue by the raising of the dam at Assouan will be considered by the general public to be outweighed in importance by the claims of such a historical monu-

ment as the Philæ temple, no matter that the temple may possess artistic qualities in its painted decoration or unique character. However much we personally may regret the loss of such precious remains, we cannot but admit that in all periods of the world's history the art of the past has had to go when it stood in the way of either the art or the material needs of the present.

The Greeks pulled down old temples to build newer and better ones, the Romans followed their example, and the men of the fourteenth and fifteenth centuries destroyed the work of the thirteenth and fourteenth to make room for their own. All that we can do, therefore, at the present day, is to see that no ancient monuments are destroyed unnecessarily, but we must be prepared to admit that there are occasions on which such destruction is necessary. We must also be prepared to show that what we desire to be preserved is worthy of preservation at the cost which such preservation will involve. It is difficult to see how such conditions are to be complied with in the case of Philæ. Its setting is undoubtedly incapable of preservation, and it is difficult to specify how the temple itself, and particularly the painted decorations, are to be preserved if the dam is to be raised. Therefore we fear, much as we regret it, that Philæ must go.

A long report of a special meeting of the Pembroke Urban District Council is given by the *Irish Times*, which illustrates very clearly some of the difficulties that attend the provision of housing accommodation by local authorities. No matter what scheme is brought forward there seems always to be a certainty of opposition. In this case the scheme seems to have been carefully prepared, providing for the erection of 295 houses at rentals of 4s. 3d., 4s. 6d., 4s. 9d., 6s. 9d., and 10s. a week, and according to the chairman the scheme would involve an expenditure of £60,000, and would pay for itself and not cost the ratepayers one farthing, inasmuch as the rents receivable by the Council for the houses would more than cover all the outlay and all the annual expenses. The Council seems to have been particularly fortunately placed by the generous assistance of Lord Pembroke, who is giving towards the cost of the housing schemes one-half of the compensation to which his lordship would be entitled as ground landlord of all the property the Council is taking over. Of course, there



OWAIN GLYNDWR'S PARLIAMENT HOUSE.—FRONT VIEW OF OLD PARLIAMENT HOUSE, BEFORE RESTORATION.

was an opposition who asserted that the scheme would not be self-supporting, and also that the houses ought to be let at a lower rent. These objections must always be the Scylla and Charybdis of municipal housing schemes. On the one hand the schemes must avoid the erection of houses at rentals which the tenants cannot afford to pay. On the other, they must steer clear of the necessity of imposing burdens upon the ratepayers, in order to make their finance possible.

The report for the past year of the Leeds Corporation Improvement Committee makes it clear why that city has apparently lagged behind in taking up the Town Planning question. A tabulated statement in the report shows that between 1893 and 1902 there were built in Leeds 22,776 houses; from 1903 to the present year only 14,014 have been built. According to the report the increase in the population during the last decade was 16,600. It is obvious, therefore, that the provision of house accommodation has been in excess of the increase of population.

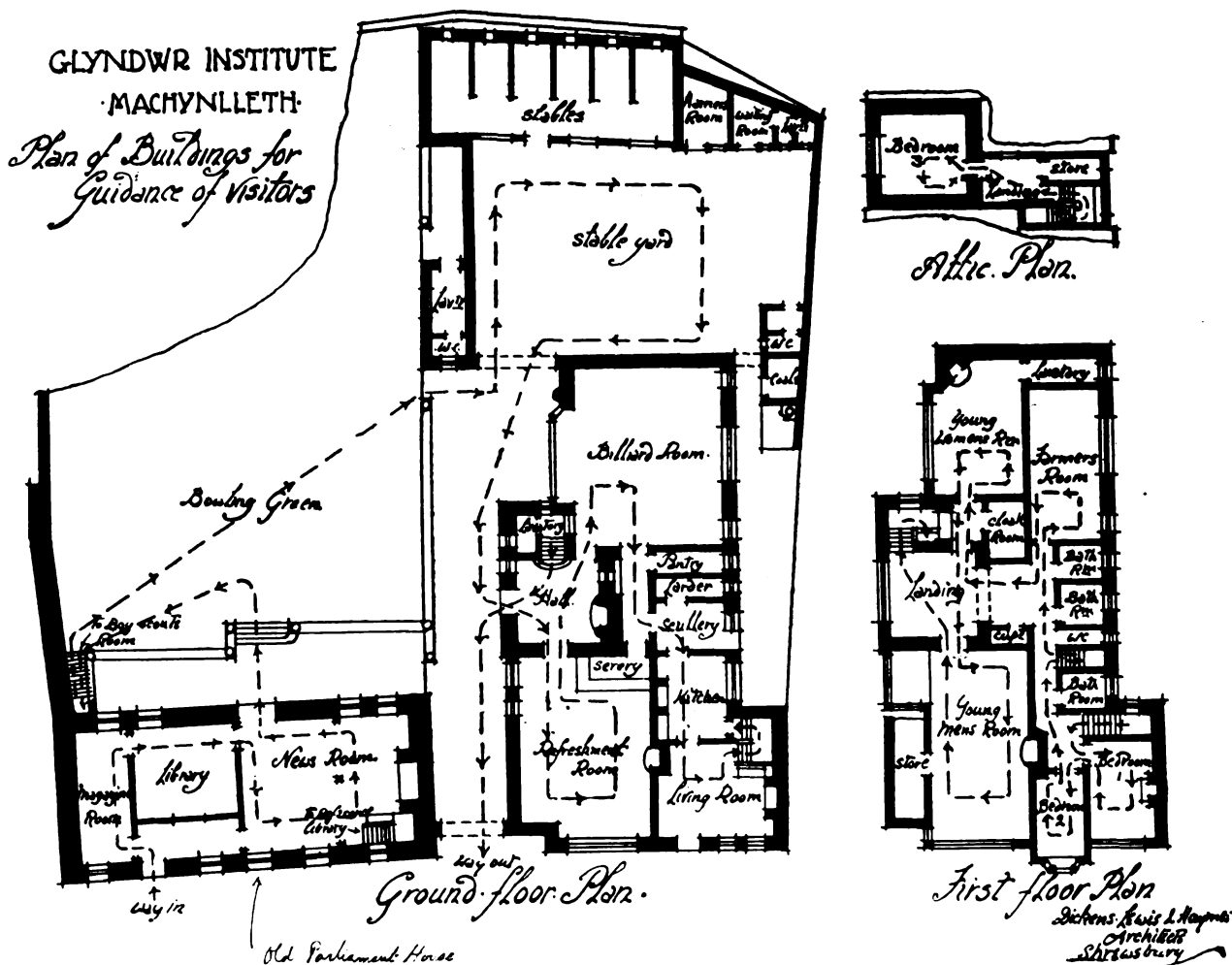
Adversity is not always without its benefits, and the depression in the slate trade, which in company with all building industries has been suffering of late, has stirred up the Carnarvonshire County Council to consider in what way the Government can assist in developing the Celgwyn Mountain district. A statement was made at a meeting that by running a tunnel through the mountain and spending £2,000 annually upon pumping water from the quarries, these would be able to work successfully instead of closing down.

A lamentation appears in the *Surrey Advertiser* that Pewley Down, a height immediately above the town of Guildford, is apparently doomed to pass into the hands of the builder. Once again we have here the conflict

between beauty and utility. Indeed, it necessarily follows that the development of the Garden City and Garden Suburb movement must result in alteration and sometimes spoliation of the natural beauty of the country side. If we are all going to have big gardens and the other amenities of the Garden Suburb, many of the charms of the country must go; trees must be cut down, downs and meadows turned into building land.

With regard to Pewley Down, tentative proposals have twice been put forward for the inclusion of this piece of ground as a public resort, but the reception these efforts met with does not encourage another attempt; in other words, the people of Guildford do not think that the beauty of Pewley Down is worth the cost of preservation.

At the annual meeting of the Birmingham Central Literary Association, Mr. Arthur Harrison, the retiring president, in his valedictory address spoke pessimistically, and confessed that Birmingham was not a beautiful city, and of course he fell foul of the plate-glass shop front, which he took for granted prevented street architecture from being beautiful. This, of course, is an open question and a problem of the present day, which if it has not yet been solved is not necessarily beyond solution. It is on the one hand quite open to question whether the exigencies of trade do make it imperative that buildings should have the appearance of standing upon plate glass as Mr. Harrison suggests, but if large plate-glass windows are a necessity, it is the duty of architecture as a living art to provide plate-glass windows in a beautiful building. If architects say that they cannot make a beautiful building with big plate-glass windows, they are merely confessing their own weakness and denying the function of architecture, which is to combine utility with beauty in building.



OWAIN GLYNDWR'S PARLIAMENT HOUSE AT MACHYNLLETH.

By the Rev. Professor E. TYRRELL GREEN.

BORN in 1359, by the opening years of the fifteenth century Owain Glyndwr from a guerilla leader had become an organiser and a statesman. He was virtually ruler of Wales, and during his successful years made Machynlleth his capital. Here he summoned a great Parliament in 1404, and a persistent tradition points out the house where this assembly met, the first and almost the only approach to a Parliament ever held in Wales. Before the delegates in conclave were laid Owain's proposals for maintaining the independence of Wales, and steps such as alliance with France discussed. It may be, too, that some of Glyndwr's great ideals for his country were ventilated at this same time; the establishment of Universities—one for the North and one for the South—and the freeing of the Church in Wales from the irksome and alien domination of Canterbury by the erection of a Province under an Archbishop who should rule from the throne of Dewi Sant at Mynyw. Glyndwr was a man before his time indeed. The University he planned is at last an accomplished fact, after the lapse of nigh 500 years. The Church yet waits for her independence that she may be the Church of Wales rather than the Church of England in Wales. But great questions with far-reaching consequences were then, as now, not discussed without heat, and during the Parliament session it was that an attempt was made upon Owain's life by Sir David Gam, of red hair and crooked eye, an adherent of the English king, and the original, it is said, of Shakespeare's character of Fluellen.

The building known as the Parliament House in Glyndwr's ancient capital was until this year in a very dilapidated condition. Externally it showed, even to the casual observer, signs of great age, but possessed little attraction, being of a plain and barn-like appearance, built of the slate stone of the district. There was very little remaining as an index of the original features of the building with the exception of the oak principals in the roof, all of which, with two or three exceptions, were in an advanced state of decay. After having been long divided up so as to serve for mean and gloomy-looking dwellings, this ancient hall has, by the generosity of that patriotic Welshman and munificent benefactor, Mr. David Davies, M.P., of Llandinam, been

restored, beautified and added to, and then by him handed over to the town of Machynlleth as the Owain Glyndwr Institute, that it may once more take its place as a public building of Wales, and serve the life of the people.

When the work of restoring this interesting relic of a great past was taken in hand, extensive search was made amongst MSS. and old prints for evidence as to the former appearance of the building. Living authorities in the antiquarian line likely to possess a knowledge of the structure were also consulted. But inquiries in these directions produced very little result. No prints or drawings appear to be extant showing the original appearance, and notices of the building even in so careful a publication as the "Archæologia Cambrensis" were found to be misleading and full of errors.

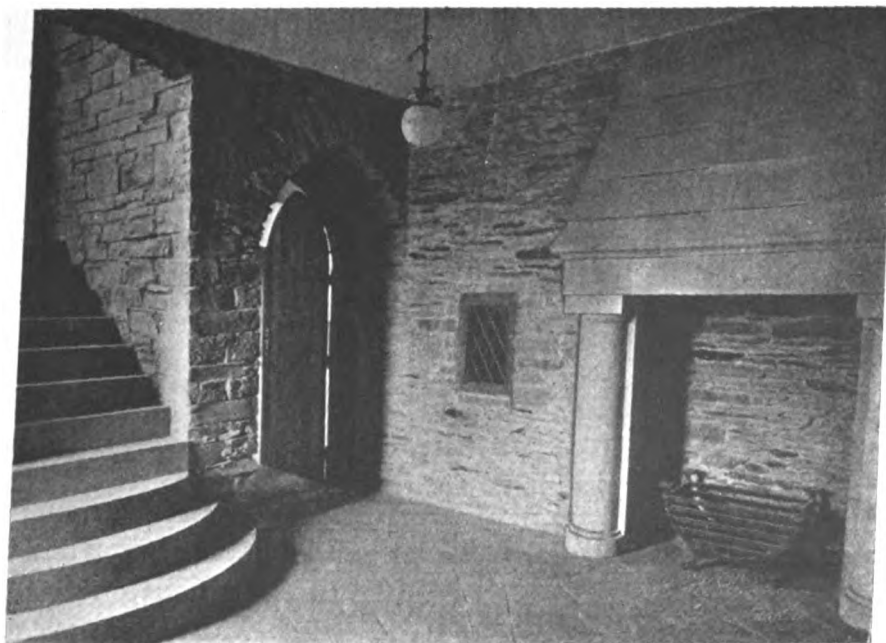
Owain Glyndwr's Parliament House now forms part of an imposing range of buildings, and is utilised as a news-room, lending library, and magazine-room on the ground floor. At the end of the news-room is an oak staircase leading to a reference-room, which covers half the area of the news-room below. The other half is open from ground floor to roof, according to the original arrangement. Above the magazine-room is a chamber, which is to be reserved as a Boy Scouts' room; this is approached by an external stone staircase, again according to the original plan, traces of the old stone steps having been left.

From the lending library, which occupies the central portion of the ground floor, one has an excellent view of the principals of the roof, with the oak rafters and braces, which have been restored exactly as they must have appeared in Owain Glyndwr's time. Upon the demolition of dividing walls and other parts added when the building was converted into dwelling-houses, a certain amount of ancient material was brought to light. Upon a careful comparison of such fragments with the existing structure it was fortunately found possible to reconstruct the Parliament House in a form closely approximating to its original one, and the building has thus, through Mr. David Davies' thoughtful generosity, been preserved with but little change through the vicissitudes of five centuries, and in spite of the vandalism brought to bear upon it in comparatively recent times.

In this historic building the antiquary is presented with some features of great interest. The roof is a good example of the work of the time, being of typical early fifteenth-century construction; and although, of course, it is much

plainer and ruder in form, it belongs to the same age which gave us the splendid example at Westminster Hall. Many roofs of the kind must have been erected in the domestic buildings of Wales at that period, but, unfortunately, very few now remain.

structed, having the hazel twigs interwoven with upright pieces let into the oak framing. The same method has been followed in the restoration, and two of the panels have been left exposed, to show the method of construction. Since the formal opening of the building, two of the plaster panels

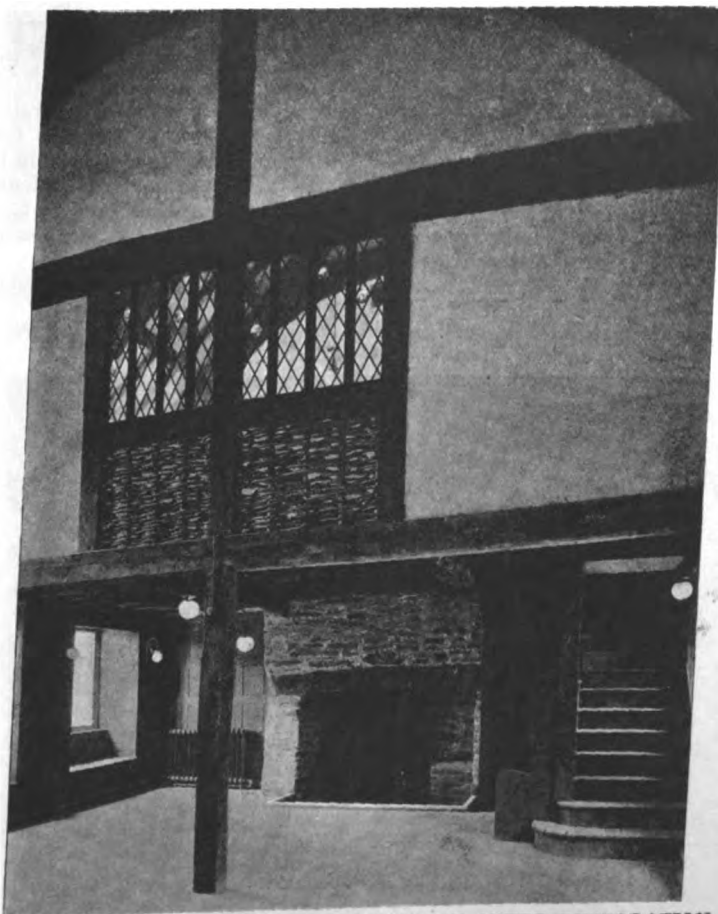


NEW BUILDINGS.—VIEW OF ENTRANCE HALL.

Particular interest attaches to the way in which the room has been partitioned off. The centre part, now used as the lending library, was doubtless the Parliament or Council Chamber. The present magazine-room was probably a retiring-room, and the part now occupied by the news-room,

have been decorated with paintings of scenes from the life of Glyndwr, which may be regarded as typical of his work for Wales.

The new building contiguous to the old Parliament House has been designed in character with the old; in fact, the

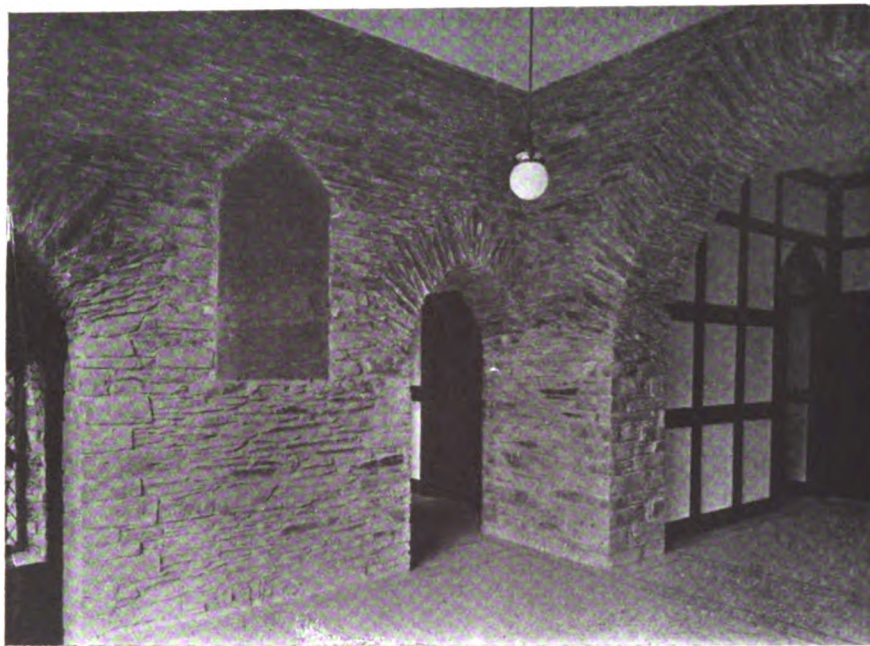


INTERIOR VIEW OF OLD PARLIAMENT HOUSE AFTER RESTORATION.

having a large open fireplace at the end, together with the reference-room over it, were rooms for the retainers of the Court. The internal partitions were constructed of exposed oak framing filled in with plaster panels, and it is interesting to note the way the "lathing" for the plaster was con-

front wall, which has been preserved, is of contemporary date, and probably formed part of the Court stables; it is joined to the Parliament House by a large stone arch with double entrance doors.

The new building is to be used for the purposes of an



VIEW ON FIRST-FLOOR LANDING, SHOWING OLD "TOLL TABLE" REFINED IN WALL.

institute, and comprises, on the ground floor, a large refreshment-room, billiard-room, and caretaker's quarters. On the first floor, which is approached by a stone staircase, is a large panelled committee-room or young men's room, a girls' meeting-room, and a room for the use of the Director of Agriculture. Bathrooms are also provided.

At the rear is spacious stable accommodation, with waiting-rooms, &c., for the use of farmers.

The large space at the back of the Parliament House has been made into a bowling green, and from this point the finest view is obtained of the whole range of buildings, which, grouped round the courtyard overlooked by a massive square tower, present a most picturesque and antique tout-ensemble.

The whole of the work has been carried out by Mr. E. E. Jenkins, contractor, Aberystwyth, from the designs and under the superintendence of Messrs. Dickens-Lewis & Haynes, architects, of Aberystwyth and Shrewsbury, to whom the greatest praise is due for a most careful piece of restoration and reconstruction, coupled with a very clever design of new buildings in harmony with the old. Everything has been done to preserve the mediæval character of this historic structure.

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of "The Cathedrals and Churches of Northern Italy," "The Cathedrals of England and Wales," "London Churches, Ancient and Modern," "The Cathedrals of Northern France," &c.

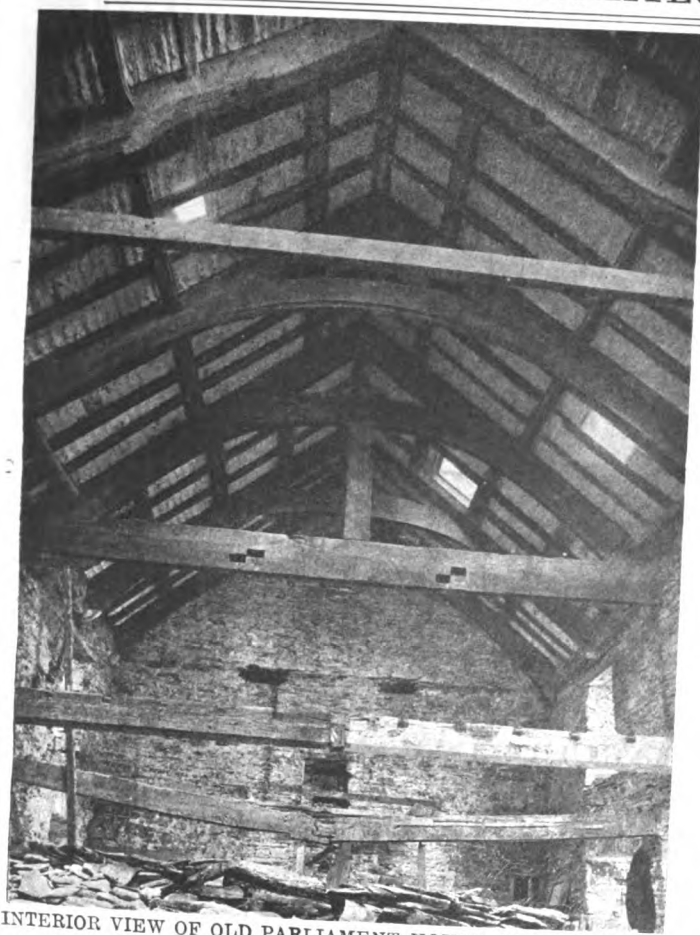
IV.—FACADES.—DOORWAYS.—CAMPANILI.—DOMES.

(Continued from last week.)

THE celebrated circular Leaning Tower at Pisa was constructed by Bonanus, probably an Italian, and Wilhelm of Innsbruck, a German. It harmonises perfectly with the cathedral and the baptistery, the three buildings, which stand in dignified seclusion at the north end of the city, forming a group perhaps unparalleled for beauty in Southern Europe. The lowest storey is formed of blind arcades and half columns similar to those in the façade of the cathedral, whilst the seven upper divisions are open arcades with isolated columns, running up to a height of about 142 feet. The style is pure Romanesque, simple and very elegant in all its details. The deviation from the vertical line of about 12 feet was, in the opinion of some, caused by a careless



INTERIOR OF OLD PARLIAMENT HOUSE, MACHYNLLETH, BEFORE RESTORATION, LOOKING EAST.



INTERIOR VIEW OF OLD PARLIAMENT HOUSE, MACHYNLLETH, BEFORE RESTORATION, LOOKING WEST.

construction of the foundation, and was afterwards adhered to in order to prove what technical skill could do. This peculiarity cannot be excused, being contrary to all æsthetic laws; and though we may admire the ingenuity of the architects in having applied certain laws of gravitation, no architect should be advised to imitate such mechanical "tours de force."

It is now a pretty well-ascertained fact that the peculiarity of this Leaning Tower at Pisa is the effect of accident, and not of design; in fact, the west front of the cathedral and several of the columns are also out of the perpendicular, and the high altar, a late Renaissance structure, had settled down so much at one end that it was found necessary to take it down and re-erect it in 1825.

It is evident from the spongy nature of the soil that the leaning took place long before the completion of the tower, because the upper storeys have their columns longer on one side than the other, and the top storey of all, a later addition, is built upright. The upper storeys, also, are set back more on the inner than the outer sides, all which points to the fact that the builders were desirous of remedying the defect.

Though the walls of this celebrated structure are 13 feet thick at the base, and about half as much at the top, they are constructed throughout of marble. The entire height is 183 feet, but the ascent is easy by a stair in the walls, and the visitor hardly perceives the inclination till he reaches the top, and from the lower edge of the gallery looks "down" along the shaft receding to the base. There are seven bells in this campanile, so arranged that the heavier metal may counteract the leaning. One of them, called Pasquaveccia, was tolled when criminals were taken to execution.

The campanile of Siena Cathedral rises from out of the body of that structure on the western side of the south transept. It is square, and coursed equally in black and white marble; the pilasters at the angles are carried up and finished with tall square pinnacles, and the mass is lighted by windows of an increasing number of openings as the tower ascends, beginning at about the level of the eaves of the principal roof.

At Lucca there is no capping to the campanile; at Siena there is a low four-sided spire.

Of Western Italian campanili no examples so charming and satisfying can be recalled as two in Viterbo, one belonging to the cathedral, the other to San Giovanni Battista.

Both are Pointed. The cathedral campanile attached to the west end of the north aisle of that sadly disfigured edifice is, as usual, entirely without buttresses, and for some 50 feet in height is a plain mass of masonry. Above this, four stages of coursed black and white stone, each stage having a pair of two-light windows, divided from the next by well-marked string courses, complete the elevation of the tower, which is capped by a very low octagonal spire, a feature constantly introduced.

This sort of design is of common occurrence in these parts, and is evidently derived from the Early Roman campanili, of which so many remain.

Singularly beautiful is the fenestration of this steeple of Viterbo Cathedral. The windows increase in size and height as they ascend, and considerable variety is observable in their tracery, some of which is of the "plate" and other of the "bar" kind. We have the circle with tracery radiating from a smaller one, and an arrangement of quatrefoils, all of the most graceful character. In the 50 feet of unpierced wall grey and brown stone is employed in courses, and in the pierced stages the same arrangement, but in white and grey, thus producing a most engaging effect of natural colour. The slenderer but no less pleasing campanile of San Giovanni Battista presents much the same features, though on a diminished scale.

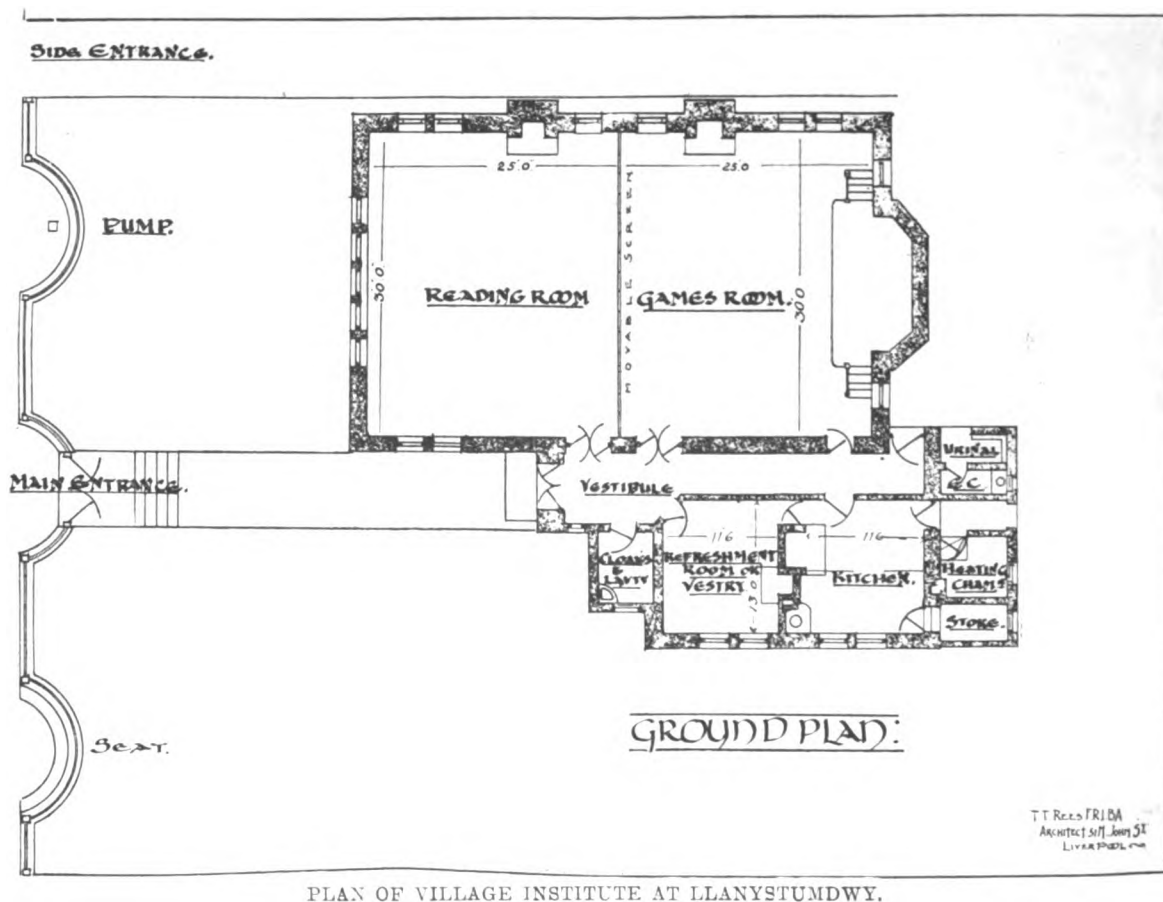
Among the few monuments of the Middle Ages in Rome to remind us of the eventful periods between the fall of the Western Empire and the Renaissance are those fine old campanili, rising so conspicuously in square towers of brickwork. Terminating in very low, four-sided spires, they are mostly adorned with inlaid crosses and discs of porphyry, and bright green or yellow earthenware, and are divided by cornices (the loftier by seven such) of marble or terra-cotta corbels, between which are open arcade windows with marble colonettes of various sizes, whose heavy and barbaric capitals are also various.

It is difficult to determine the respective ages of all the Roman belfry towers, but impossible to admit what Italian and some of the German archaeologists have claimed for their high antiquity.

The most ancient churches in Rome that still have such towers, *relatively* ancient also, are Sta Pudenziana; the Lateran, whose two actual belfries (of the fifteenth century) are insignificant; Sta Maria Maggiore; San Giorgio in Velabro, dating from the close of the seventh century; Sta Maria in Campo Marzo, also of the seventh century; and San Silvestro in Capito. To the eighth century have also been ascribed the towers of Sta Maria in Cosmedin, one of the finest and loftiest of the Roman campanili, and San Giovanni à Porta Latina; to the ninth century, those of Sta Prassede, Sta Cecilia, Sta Maria Nuova (or Sta Francesca Romana)—a most notable example—and San Michele in Sassia, near the Vatican colonnades, one of the most graceful and finely proportioned of its class in Rome.

But tradition is not proof, and in the absence of written evidence the best test as to the age of buildings must be sought in analogies of construction, applying which to the structures in question it may be determined that the Roman steeples in their aggregate should be dated as ranging at periods comprised between the latter years of the eleventh and the second half of the fifteenth century, though it seems certain that that of the ancient basilica of San Paolo fuori le Mura, almost entirely destroyed by fire in 1824, was standing long before the close of the former epoch; and, contrasting the superb tower of Sta Maria Nuova with the church from which it rises, the superiority of its masonry to that of the latter, a specimen of most barbaric construction, is very noticeable.

The small tower of an equally small church on the river-side in the Trastevere quarter—Sta Maria in Cappella—may be the most ancient in Rome, and belong to the original structure, whose precise date has not been ascertained, built in 1090, and attached to a hospital founded by the noble matron canonised as Sta Francesca Romana. Others among these towers remarkable for picturesque and interesting character that may be assigned with something like certainty to periods within successive centuries are, and may be dated. To the twelfth century the following may be assigned: Sta Maria in Cosmedin; San Lorenzo in Lucina (shorn, however, of its original height); Sta Maria in Monticelli; Sta Maria in Trastevere; San Silvestro; San Giovanni à Porta Latina; San Bartolommeo, on the Tiber Island; San Salvatore "alle Cappella," a small and dilapidated but remarkable example; and another in Trastevere, San Salvatore in Creste.



To the thirteenth century belong Sta Cecilia, Sta Maria in Trastevere, San Giorgio in Velabro, and San Michele in Sassia; Sta Croce, San Lorenzo fuori le Mura, Sant' Alessio Aventino, and, the most majestic amongst Roman belfry towers, SS. Giovanni e Paolo.

Of the fourteenth century is the tower of Sta Maria Maggiore, and of the fifteenth century, San Sisto on the Appian Way, San Spirito, and Sta Maria dell' Anima, a light, graceful steeple, with Ionic pilasters and small tapering spire.

One of the most interesting among the campanili of Central Italy is that attached to the Duomo at Pistoja. Originally it was, no doubt, nothing but a fortified square watch-tower. The warlike Teuton and the Roman clerical elements may be traced in all the ecclesiastical and secular buildings of this period. The unartistic German tribes that settled in Italy brought with them heavy and gloomy constructions, with a marked tendency to building impregnable castles. The battlements, panelled or plain, richly decorated or not, on churches and towers took their origin in the distant regions of Asia, and were in use from time immemorial all over the globe in different forms.

The campanile of Pistoja Cathedral has undergone great changes. The lower part is of an older style. We see on the bare walls here and there the arms of the governors of the town; the few small and arched windows have a pointed moulding over them.

The campanile is also known as the Torro del Podestà, from which we may assume that it was in the first instance a secular building. Its secular form has not even been changed by Giovanni Pisano's superstructure, which is light and elegant, but at the same time in many respects faulty.

(To be continued.)

ILLUSTRATIONS.

INTERIOR OF THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK.

THE view which we publish of the interior of the cathedral of St. John the Divine, New York, is reproduced, by permission, on a reduced scale, from a beautiful print issued by The Churchman Company, of 434 Lafayette Street, New York, at the price of \$3 on Japan paper and \$4 on Indian, mounted and postage free.

HOUSE AT CHURWELL.

THIS house is built of sand-faced bricks with white joints and white stucco panels between half-timber work, which is finished brown. The house has been built at a cost of £950 from the designs of Mr. Josiah Auty, A.R.I.B.A.

PORT PARAGON HOTEL, CLIFTONVILLE, MARGATE.

THIS hotel, which occupies a position second to none in Margate, has recently undergone a partial remodelling, the scheme providing a large entrance hall with office, &c., lounge with buffet, lavatory accommodation, and cloak-rooms, &c. The illustration shows the porch, which is in Portland stone with Sicilian marble steps and lamp pedestals. The general contractor for the works was Mr. F. Eaton, of Upper Tooting, S.W. The stonework was carried out by Messrs. Osborn Bros., of New Street, Margate, and the carving by Mr. Lionel F. Roselieb, of Park Hill, Clapham, S.W., the architect being Mr. F. Leonard Poole.

VILLAGE INSTITUTE, LLANYSTUMDWY.

THIS institute, which was opened on the 21st ult. by the Chancellor of the Exchequer, was the gift of the Right Hon. David Lloyd George, M.P. The accommodation of the building includes a reading-room and a recreation-room, divided by folding screens, which, when opened, converts the two rooms into one large hall, capable of seating over 300 people, exclusive of platform. In addition, there are lavatories, retiring-room, kitchen, and stores, giving facilities for social functions. The materials, as far as possible, have been obtained in the locality. The walls, to the height of 4 feet, are of stone, over which, as will be seen from the illustration, there is timber framing filled in with stonework and cement panels in the old English half-timbered style. The roof is of rough Welsh slates. The aim has been to make the building harmonise with its surroundings, and to carry out the idea of a village hall. The architect is Mr. T. Taliesin Rees, F.R.I.B.A., of Liverpool, and the contract was let to Mr. John Humphreys, of Criccieth.

WOLSONBURY, HIGHGATE.

THIS house has recently been erected at Highgate for Mr. R. F. Martin. It has been carried out in the Tudor style, with half-timbered overhanging upper part and gables, and the roof covered with old sand-faced tiles. The interior on the ground floor is panelled in oak, that in the dining-room being from an old house in Sussex. The modern paneling was executed by Messrs. Cleaver, of 35 Berners Street, W. The builder was Mr. W. Irwin, of 303 Essex Road, Islington, N., and Mr. John Farrer was the architect.



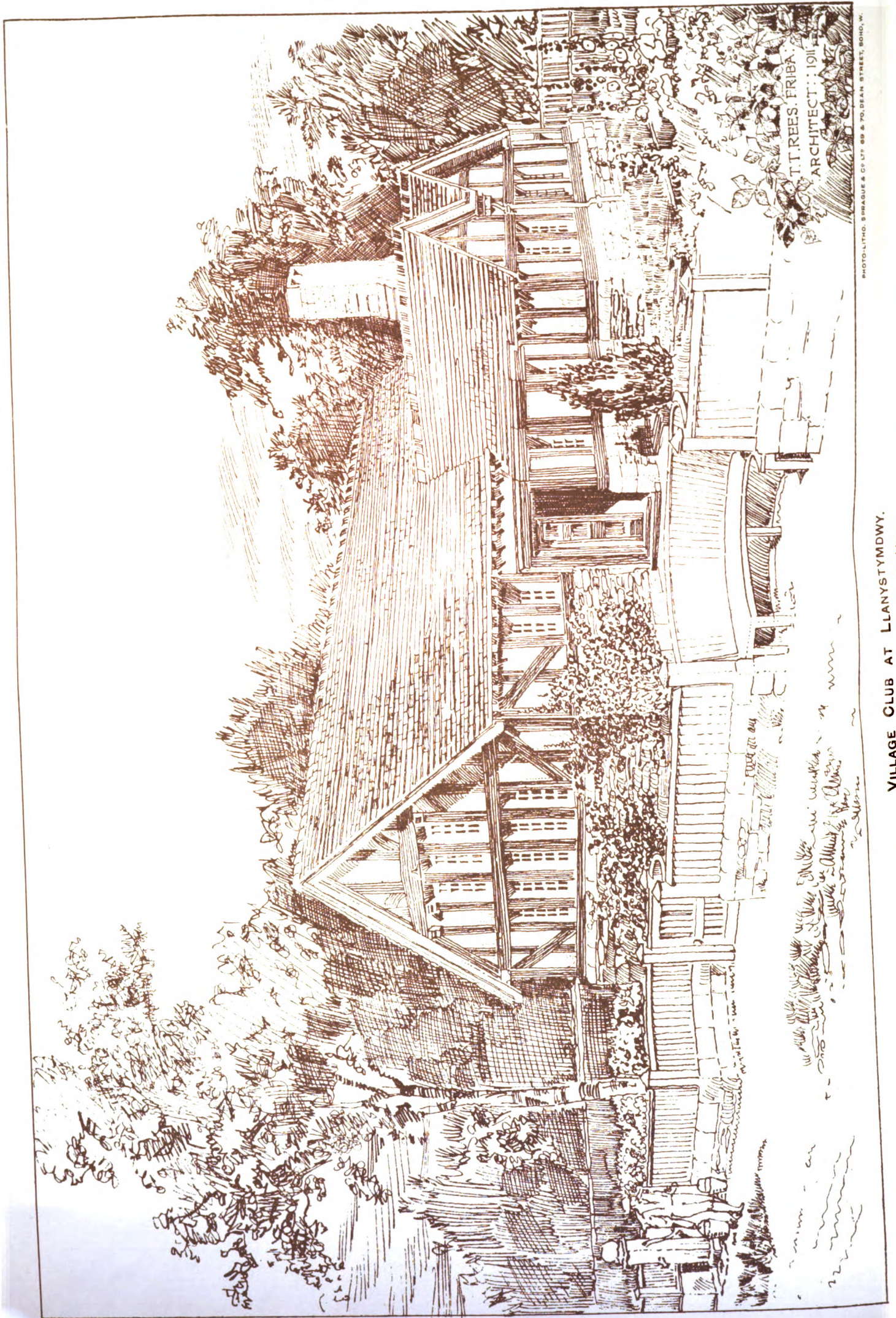


PHOTO-LITHO. SPRAGUE & CO. 177 & 70, DEAN STREET, BONG, W.

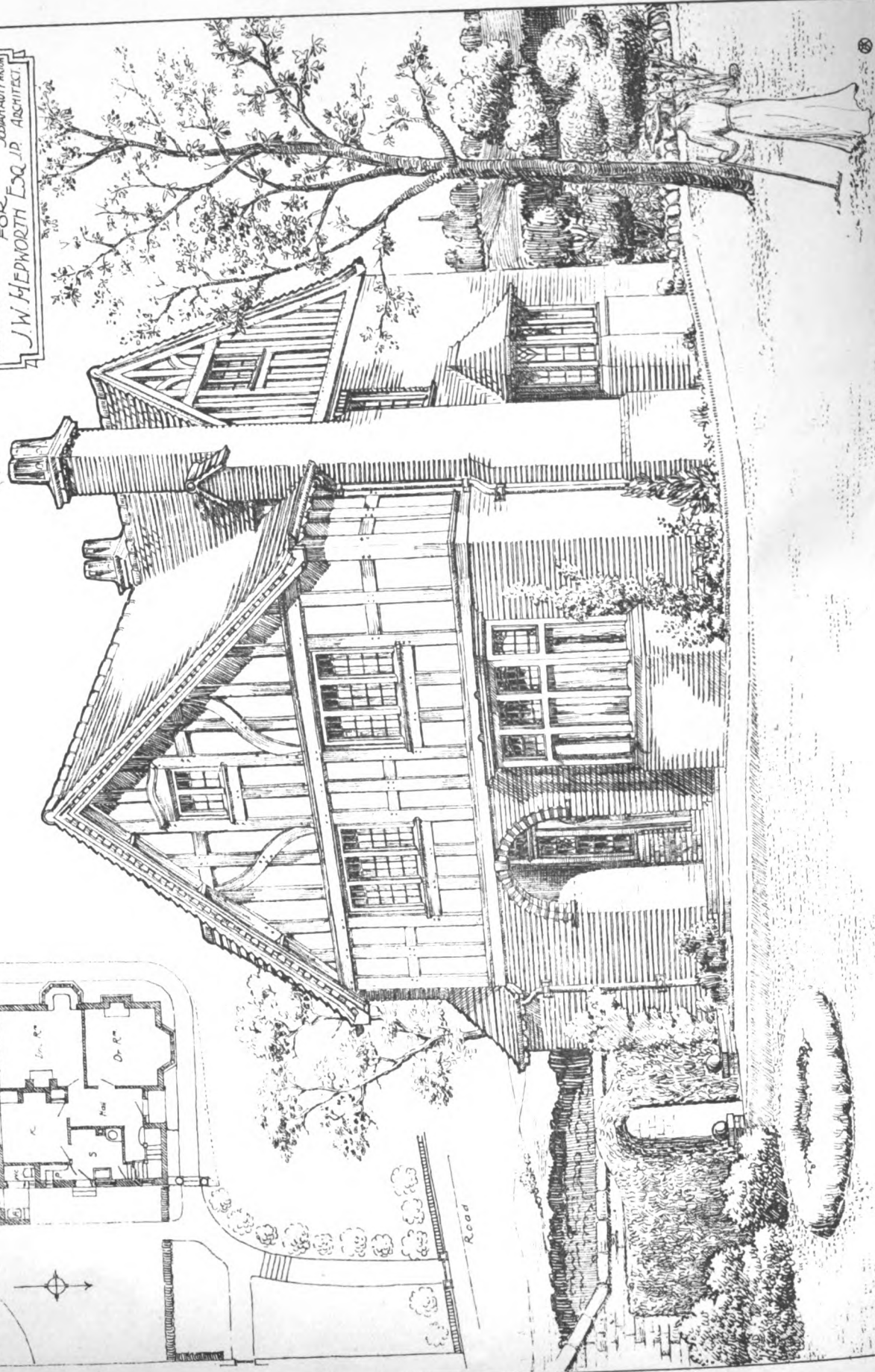
VILLAGE CLUB AT LLANYSTYMDWY.
MR. T. TALIESIN REES, F.R.I.B.A., ARCHT.

W. T. REES, TRIER
ARCHITECT, 1011
VILLAGE CLUB AT LLANYBYNNY.



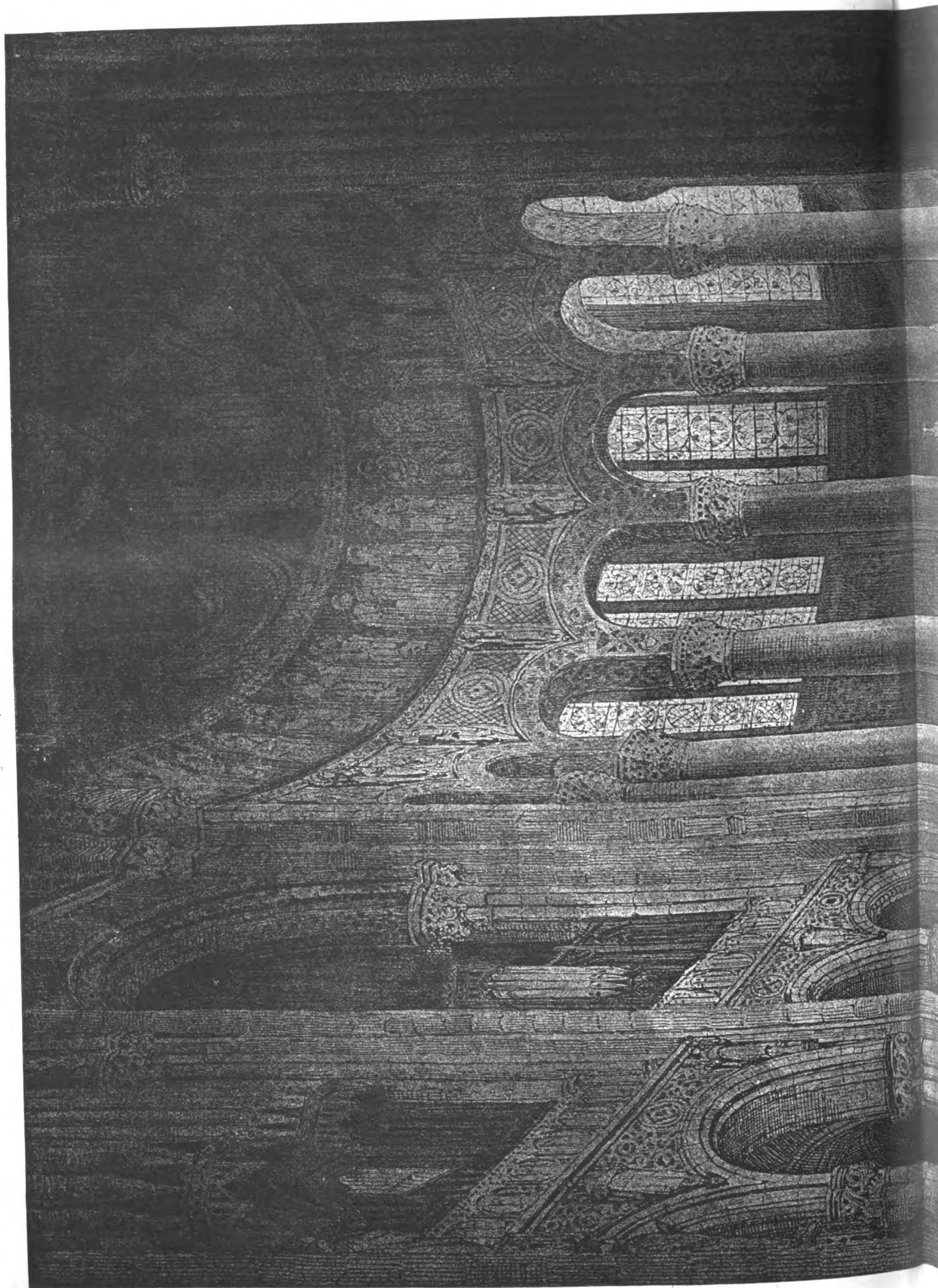
HOUSE AT CHURWELL
FOR
J. W. HEDWORTH ESQ. JR. ARCHTCT.

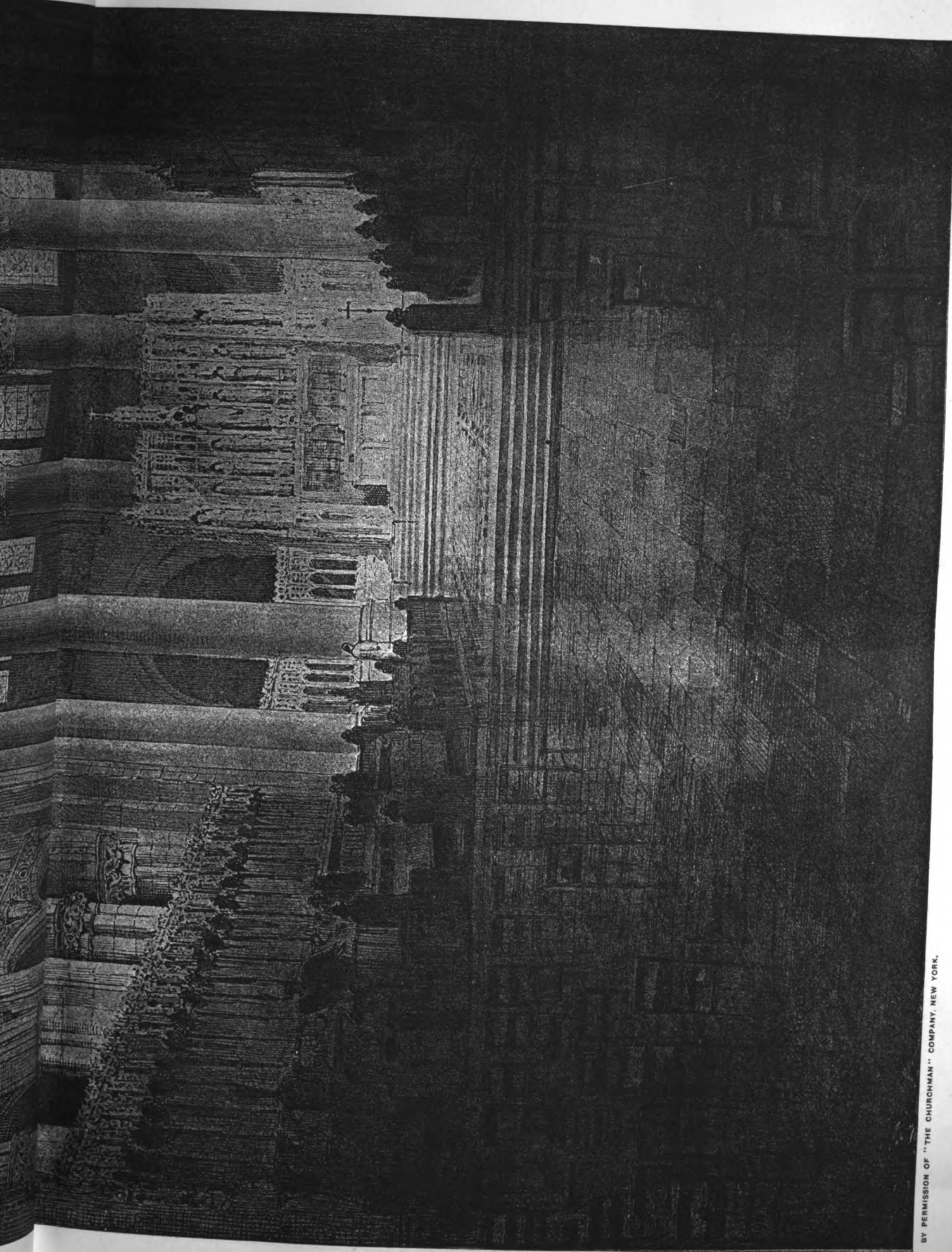
PLAN OF GROUND FLOOR





The Architect. Oct. 4th 1912.





BY PERMISSION OF "THE CHURCHMAN" COMPANY, NEW YORK.

"INK-PHOTO" SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

INTERIOR OF THE CATHEDRAL OF ST. JOHN THE DEVINE, NEW YORK.





NEW ENTRANCE to the
FORT PARAGON HOTEL
CLIFTONVILLE.

PHOTO-LITHO. SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.





• WOLSONBURY • HUGHGATE • FOR • R. F. MARTIN • ESQ. • JOHN FARREY ARCHT.

PHOTO BY THE SPRAGUE & CO. 69 & 70, DEAN STREET, BOMBAY.



THE ARCHITECTURE OF LONDON HIGHWAYS.

By VIATOR.

FROM THE BANK TO THE PUMP.

IN a previous article mention was made of the principal streets which formed the chief part of London proper in the reign of the unlamented James I. Of these Cornhill was one, and it is that thoroughfare and Leadenhall Street which will be laid under contribution in order to provide material for this present article.

The order of itinerary hitherto followed will be varied in this instance; as in strolling eastwards inspecting the buildings on the southern side of Cornhill the survey will be continued along Leadenhall Street before returning westwards to complete the inspection of the former thoroughfare.

In an interesting little work called "London in 1731" (purporting to be written by a Portuguese, Don Manoel Gonzales) may be read: "Cornhill Ward comprehends little more than the street of the same name and some little lanes and alleys that fall into it, as Castle Alley, Sweeting's or Swithin's Alley, Freeman's Yard, part of Finch Lane, Weigh House Yard, Star Court, the north end of Birching Lane, St. Michael's Alley, Pope's Head Alley and Exchange Alley. Cornhill Street (*sic*) may, in many respects, be looked upon as the principal street of the City of London. . . . This street, also, is situated near the centre of the City, and, some say, upon the highest ground in it.* . . . Here, also, it is said, the metropolitan church was situated when London was an archbishopric."

As throwing light upon the thoroughfare of two centuries ago, the above is interesting; but our immediate purpose is with the buildings of the present.

In No. 1 Cornhill, the premises of the Liverpool and London and Globe Insurance Company, a good commencement is made; it is a block that commands attention (more particularly when approach is made from Poultry), occupying an angle site between Cornhill and Lombard Street. Its circular sweep of stone façade, capped by a well-contoured dome, presents a thoroughly pleasing appearance; the drum of the dome is improved by the conjunction of heavy stone trusses. The building is well proportioned, and the ornament is slight but sufficient.

The premises of the Scottish Equitable Life Assurance Society present an unusual façade, and one that is worthy of some description. It is very free Renaissance—so free, in fact, that it can scarcely be justifiably termed Renaissance, but would be better described as "twencental," with something of the vigour and rigour of the Scotch Highlands. Seven-storeyed stone block as it is, it does not look unpleasantly tall; indeed, it may be supposed that by a denizen of New York it would be regarded as undersized, in common with all other English buildings (Queen Anne's Mansions, Westminster, included). The ground and first floors are in grey granite, toning well with the white Portland stone superstructure. As regards the design, there is a Roman Doric order to the ground floor, with a very restricted projection of the ovolo and abacus of the capital. There is a squareness about the mouldings and about the general decorative scheme that may be partially Scotch, but is wholly effective, and such carving as there is well worthy of inspection. The gable is crow-stepped with doubly-broken pediment; the decorative ornament, too, is sparsely introduced, and is distinctly good.

Mr. J. Macvicar Anderson has designed a very satisfactory block in a different treatment and class in the offices of the Mutual Life Insurance Company of New York. Here is a rare combination of materials—Labradite pedestals, red granite shafts, white marble and stone. Also here is to be seen a combination (or, at any rate, a superposition) of the orders, showing Roman Doric entrance, Ionic columns and pilasters pervading the ground and first floors, Corinthian pilasters embracing the second and third floors (with Corinthian columns also to the second), and the Composite order in columns to the third floor. The ornament is well distributed, and is concentrated in the storeys below the main entablature topping the third floor. The pediment, breaking out of the entablature over the ground floor, does not give a pleasant impression, though the carved filling is good, whilst the pediment mouldings are overloaded with decoration. The balustrade at the top has "a starved and hungry look."

* This is probably incorrect, for in Panyer Alley (lying between Newgate Street and Paternoster Row) is a stone tablet on one of the houses, bearing the inscription "When y^e haveough^t The City Round, yet still this is The High^t Ground. August the 27, 1688."

The Commercial Union Office is another of the fine series of buildings in this interesting thoroughfare, which for its short route possesses a greater proportion of architecturally meritorious work than any street yet considered or likely to be considered (certainly Kingsway will not rival Cornhill). The offices now under review are Renaissance in style and six storeys in height; the ground floor is free Doric; the first floor is treated architecturally as a mezzanine floor; the Corinthian order embraces the next two storeys, the central portion being recessed behind a striking colonnade; the fourth floor is presented as "attic" in elevation. The blind balustrade at the summit is unusual, and this is surmounted by good urns.

It is to be noted that here, as in the Mansion House-Holborn route, several buildings are necessarily passed by without comment, though many of them may, and some of them certainly do, deserve the appreciative notice of the dilettante wayfarer. But the church of St. Michael may by no means be passed in this way. It is one of the few churches in the old City possessing an imposing campanile; the plain stone tower is impressive in its complete Gothicism, more pleasing, indeed, than another church tower noticed in the course of one ramble—that of St. Mary Aldermary in Queen Victoria Street. The tower, which rises in four stages, as seen from the street, stands behind the portal, and has polygonal tourelles at the angles extended into pinnacles. The "transitional" entrance, with its three orders of pillars, is a delightful piece of work, and is elaborately ornamented.

And what a contrast to the church of St. Peter-upon-Cornhill! In the latter there is nothing grand nor effective nor conspicuous even, except possibly the "key" weather-vane, emblematic of the Apostle. In place of stone, there are red brick and stucco; in place of fine Gothic there is poor and anemic Renaissance, and in place of a boldly announced entrance to an important church there is a sneaking entrance to a building which seems wishful to withdraw from the public gaze, much as the Apostle himself desired to withdraw after the notorious act of denial which he preferred to a nobler act of self-denial. These two churches seem to typify the difference between the Archangel and the arch-Apostle. The red brick tower of St. Peter is squat, and has a lead-covered cupola and spire; the dome is set square on top of the short tower, and this is, indeed, the best part of the external structure. The nave windows, acting as clerestory lights, are curious, probably unique in treatment, being circular, with the upper half framed-in square, thus introducing spandrels, utilised for the reception of swags; the upper half has, too, the arch-mould supported as on impost caps, from whose necking sweeps downward and ever inward the lower archmould.

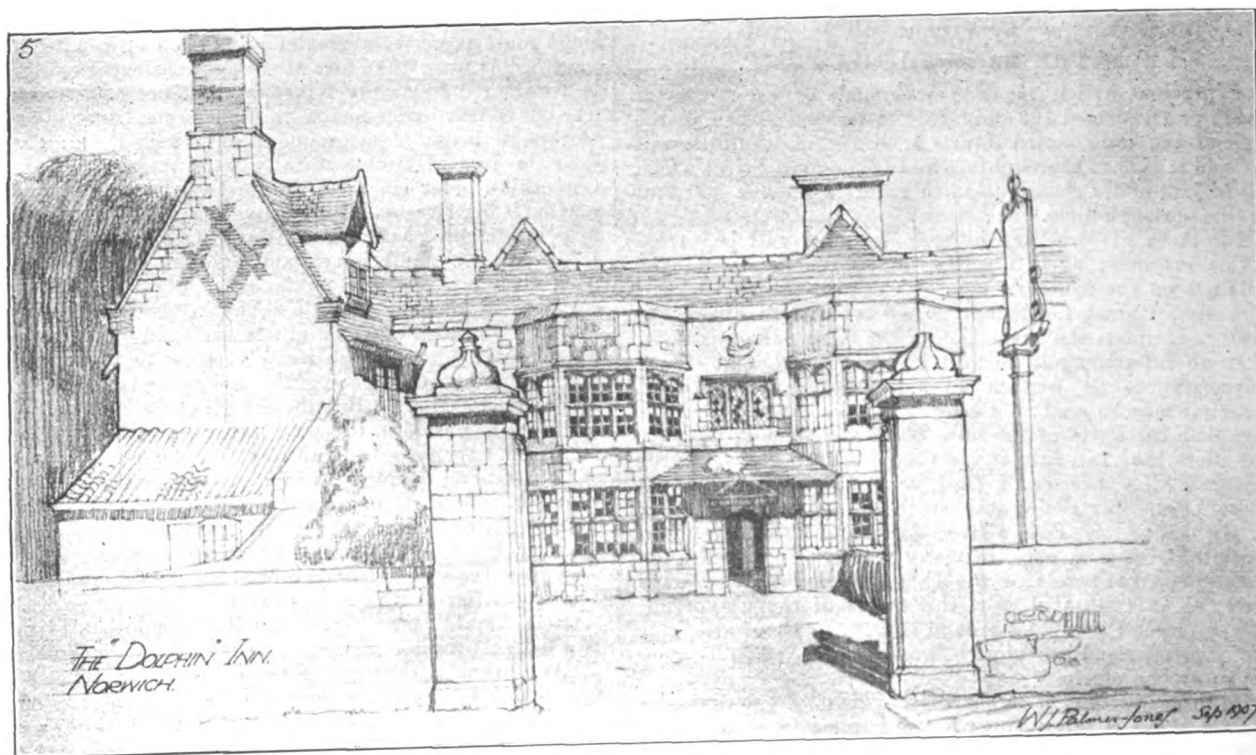
The only other building to be passed in review, situated on the south side of Cornhill, is that numbered 54 and 55. A pink terra-cotta façade in the Tudor style of architecture. The design is sufficiently lively, without being at all fussy, and the varied colouring is very pleasant. There is but slight direct ornament, though we notice one griffin, seated upon an angle corbel and grinning down quite inoffensively upon the wayfaring public.

Crossing Bishopsgate Street, another of the old thoroughfares is entered. This is Leadenhall Street, erstwhile famous for the East India House and the Royal African House, the London offices and headquarters of the well-known trading companies (incorporated in 1600 and 1663 respectively). Leadenhall Market, too, is an old-established one, but the buildings lie off and behind the thoroughfare, and will not be considered here.

Regarding at first the southern portion of this highway, the first score of numbers do not provide much that is noteworthy, though No. 11 (The Bank of Adelaide) stands forth conspicuous from all the rest, mainly by reason of its extreme newness. It is not of any definite architectural style, but such as there is has a Renaissance feeling. An unusual detail is to be found in the ram's head masks, carved over the ground floor flanking pilasters; saving these, the carving is concentrated at the top of the building.

Nos. 12 to 20 provide an elevation in the Italian palace style, in stucco and grey brick, very wearisome to the eye, and conveying no sense of fitness, no sense of life nor soul nor inspiration.

New Zealand Chambers occupy Nos. 28 to 35, and here is a really pleasant façade, where the inspiring motif is the inset projection, treated as wooden oriels on either side of the entrance and as shaped wooden bays (in series of three) to the first and second floors. The red-brick setting to the windows adequately supports them architecturally, but seems to be the least important part of the scheme of design. We have seldom seen treatment for a commercial block at once so



FROM SKETCHES SUBMITTED BY MR. W. J. PALMER JONES FOR PUGIN STUDENTSHIP, 1912.

rational and so artistic in combination. The great flanking piers do not die into the deep cornice over the second floor, breaking off square instead; this cornice has an ovolo and deep cavetto profile, the former moulding being carved into egg-and-tongue.

Reference has been made to the Royal African House, once a feature of this thoroughfare. Its place is now taken by Africa House, which carries on the memory in a very noteworthy building. It is treated as free Renaissance, and is possessed of just sufficient ornament. Over a red granite substructure are three storeys in stone, and dormer treatment above. The appropriate carving and modelling is the particular feature of this façade; over the first floor is a vigorous picture frieze, showing various of the tropical fauna, such as the hippopotamus, the camel, the rhinoceros, &c.; and elsewhere on the elevation appear crocodiles, cranes, elephants' heads, and other varieties of the animal kingdom. This is a building to attract the wayfarer's attention, however often the highway may be traversed.

Nos. 57 and 58 (erected in 1901) present another unusual front, and this succession of surprises seems to characterise modernised Leadenhall Street. It is a characteristic that merits approval, as with the varied and unaccustomed treatment may simultaneously be observed worthy and pleasing effects. In the present instance is also to be seen another variety of the inset-bay design. The style of the façade is a plain Renaissance, the red granite flanking piers having voluted capitals. The moulded brick piers over are carried up above the line of roof as pinnacles, these being connected across the façade by an iron railing. The first and second floor shaped bay windows are sufficiently massive, whilst above the cornice the third floor has a series of nine small lights, that help to give an air of finish to the broad lines of design beneath.

No. 64 is a Gothic elevation, not inspired or admirable, but yet is an improvement on Nos. 61 and 62, which is certainly not thereby saying much for it. It is redolent of the Gothic buildings erected in the mid-Victorian period, from which it probably dates.

And now, having reached the Pump at Aldgate (which certainly does not merit much inspection), attention may be directed to some of the edifices along the northern side of our route, when the first building claiming inspection is the church of St. Katharine Cree, with its porch reminiscent of Inigo Jones. This great architect did other work here, being engaged on the building till the year 1630. It is the misfortune of the Metropolis to possess so little of Jones' work in entire buildings. The Banqueting Chamber is but a small (though magnificent) section of a monumental and magnificent scheme. No. 57 Lincoln's Inn Fields finds its interest

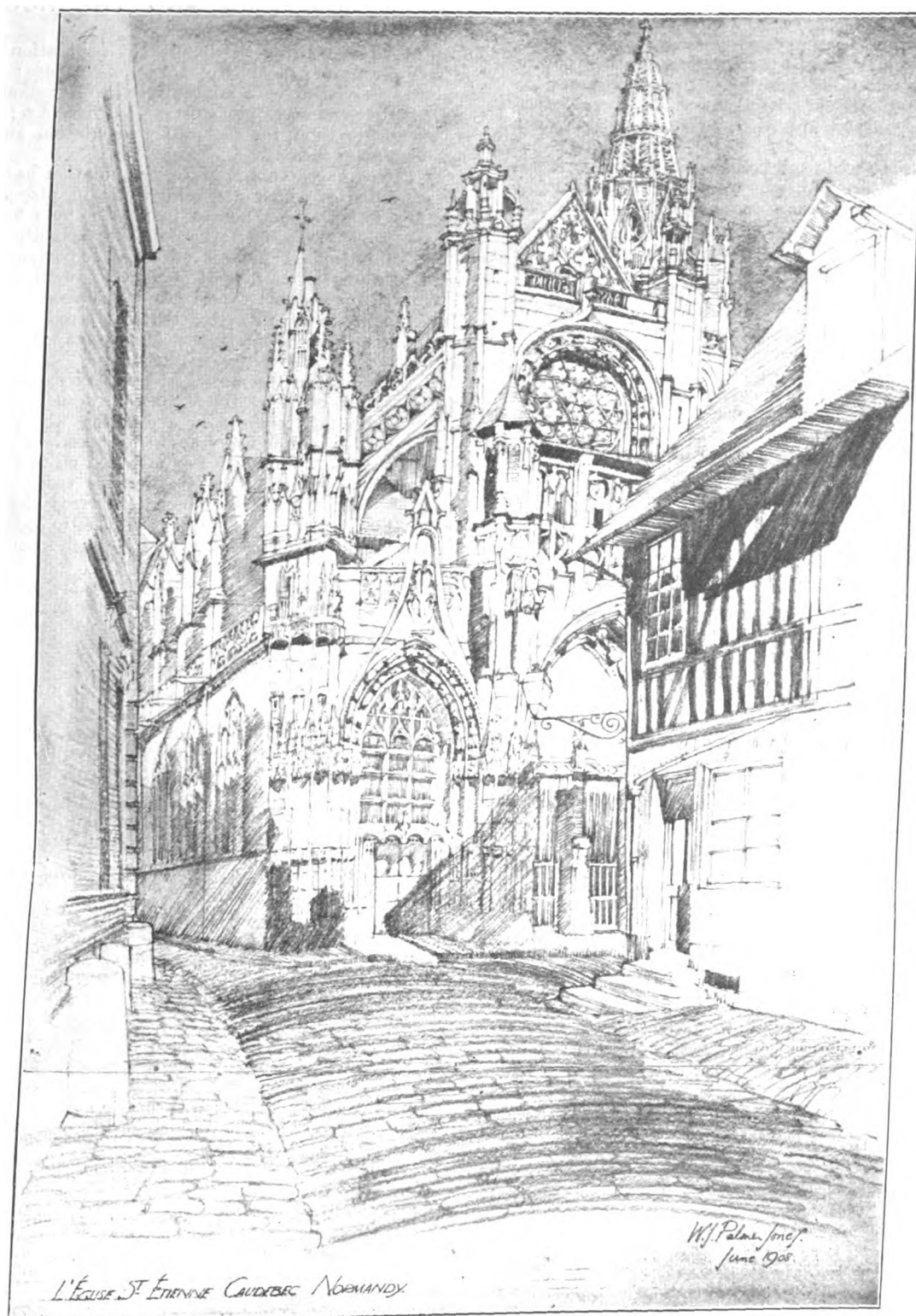
in the eyes of the literary public in the fact of its being the prototype of Mr. Tulkinghorn's residence, portrayed by Charles Dickens in "Bleak House," and York Stairs would be but a slight monument for any man's fame, however good this water-gate may be. This leaves but very few metropolitan buildings to the credit of Inigo Jones, but he still has the merit of having introduced into London the use of Portland stone. The Ionic porch to the church of St. Katharine Cree is interesting, but yet it is impossible to approve this tacking-on of exotic art to the vernacular body, an objection equally valid in the case of Jones' porch to old St. Paul's Cathedral. St. Katharine's Church tower at the south-west is a sturdy stone structure surmounted by a quaint little belfry, circular on plan, with its cupola supported on Roman Doric pillars; the south wall of the church, with its stepped-head fourteenth-century windows and its sundial, is full of interest.

Nos. 89 and 90 Leadenhall Street present a very passable, indeed a pleasant, elevation in stone; Gothic in style, with the window-heads filled in solid where they are not already square—a treatment eminently suitable for a commercial block; the dovetail billet ornament framing in the first to third floors is unusual, but not unwelcome. Nos. 99 to 103 are certainly enlivening to the thoroughfare, but not of equal merit to many hitherto noticed. The treatment of the entablature, broken round the columns, reminiscent as it is of Roman work, is restless—and this is, indeed, a characteristic of the block throughout; but there is some good figure modelling in the spandrels and tympanum over the entrance.

Nos. 107 to 109 we approve—a strong, healthy Renaissance stone block, boldly rusticated to the ground floor, and more slightly rusticated to the next two. The central treatment of the second floor is effective, with its coupled and engaged Corinthian columns and circular-headed windows. The flanking windows are brought out square at the head, the spandrels and side panels being carved. The carving throughout this elevation is good, and particularly effective on the third floor (treated as attic), where carved panels in very high relief carry up the lines of the columns below.

The church of St. Andrew Undershaft at the corner of St. Mary Axe cannot be passed without notice. Its massive western stone tower is in Perpendicular Gothic. The porch, with its carved shields, presents a curious effect, its label mould running on westwards beyond the vertical return, on the opposite side mitring round in the customary way. The battlemented parapet, with its stepped treatment, is also unusual, and not interesting.

Mr. T. E. Collcutt was architect of the Peninsular and Oriental Offices, but the buildings are not admirable; and if at times people are inclined to inveigh against the theory



FROM SKETCHES SUBMITTED BY MR. W. J. PALMER JONES FOR PUGIN STUDENTSHIP, 1912.

of design, surely here, where so many of the principles are contravened, the non-success of the building (architecturally regarded) justifies the belief in these principles. Nor do we approve No. 140, with its mediæval English pretentiousness, representing in stucco on red brick ground the half-timbering, which, when genuinely presented to the sight, is delightful. If there be any history attaching to the effigies of the mediæval armoured warrior on his pedestal over the ground floor, such history is outside the scope of our knowledge.

The next block (Nos. 141 to 144) it is a pleasure to regard, with its free unstyleable capitals to the ground floor pilasters, its good entablature with panelled frieze and trussed and dentilled cornice, and the good carved and floriated shield as a central ornament to the attic.

Passing onwards into Cornhill, and still looking northwards, at the junction with Bishopsgate Street may be noticed the premises of the Union Bank of Scotland, effectively treated in grey polished granite to the ground floor, the superstructure being in stone. This is a good commercial block, very little ornamented, but trusting for architectural tone in the main to its rusticated façade and the Ionic three-quarter columns, set recessed in a central position. The ground floor has but a slight cornice, thus leaving the main effect to the over-riding entablature, which is in accordance with the canons of our Art.

A very unusual elevation calls for notice in the premises of the Union Bank of Australia, with its terminal figures to the second floor and a certain Egyptian feeling pervading the façade, mingled, too, with much that is Grecian. The

whole is redolent of refined architectural taste, and is at once novel and pleasing.

Messrs. Ernest George & Yeates are responsible for Royal Exchange Buildings, dating from 1906 onwards; French Renaissance that may satisfy the cravings of some, but to our mind leaves something wanting. The details are too Gargantuesque to please our critical fancy, though perchance this is, as suggested by ourselves, a matter of individual taste.

But as regards the Royal Exchange, it may be hoped that there are not two opinions. Whether individual predilection be for Classic, Renaissance or Gothic, there should be unanimity of sentiment in respect to this fine work of Sir William Tite's, dating back seventy years. It occupies an island site; and if, when approached from the west, one's admiration for the noble portico and fine pediment is excited, it is but necessary to walk around the building in order to gain equal gratification from the north, east and south. It is well-proportioned, and, furthermore, such grace and dignity in combination are secured with the Corinthian columns and pilasters in their colossal grasp. Here, too, there is no overloading with ornament; indeed, there is but little ornament.

We see Sir Thomas Gresham (the Elizabethan founder of the Exchange) enriched in *effigies* on the eastern façade in the slight belfry tower provided; and his device, the grasshopper, is used as a weather-vane with good effect.

In drawing towards the end of our saunter, we find that the last building to be inspected enables us to continue sounding the note of praise which has been so persistent since the commencement of our present itinerary. The building now to be noticed is the veritable Old Lady of Threadneedle Street, who presents herself to our view across the Royal Exchange western parade. The Bank of England is one of the monuments of Sir John Soane, and worthily suggests itself in the method of treatment. It is but seldom that the Composite order is met with in London buildings, but it is displayed here in conjunction with a very Classic Ionic order modelled on the Bassæ temple of antiquity. Architects of to-day may well learn from the masters of the not-long-distant past the value of broad surfaces, of slight decoration, trusting more to structural features than to applied ornament.

When Don Manoel Gonzales' "London in 1731" was published, the Bank of England was of but recent institution, and not housed in any remarkable building, for our Portuguese friend is satisfied with a brief reference to the work of the Bank, without any description of the building or any note as to its location, whereas he is precise and at times prosy in regard to the public buildings in general. But in truth at the present moment there is no need to enter into detailed description of the Bank of England, any more than there would be in regard to, say, St. Paul's Cathedral. But we may be permitted to express a fervent hope that the authorities will never be moved to add another storey to the Bank, such as has been accorded in recent years to other notable London buildings, as witness the Sun Fire Office (opposite the Bank) and the Athenæum Club in Pall Mall. Truly in England Art takes a retired place, seeing that its cult is subordinated to the cult of the yellow tempter. Ay! truly, in the words of Russell Lowell, which will ring throughout the ages:

"Earth hath her price, for what she gives us.
The beggar is taxed for a corner to die in,
The priest hath his fee, who comes to shrive us,
We bargain for the graves we lie in.
In the Devil's mart all things are sold,
Each ounce of dross costs its ounce of gold;
For a cap and bells our life we pay;
Bubbles we earn with our whole life's tasking;
'Tis only God who is given away;
'Tis Heaven alone may be had for the asking."

THE approval of the Leeds City Council was given on Wednesday to the purchase by the Education Committee of an area of $3\frac{1}{2}$ acres of land in York Road for £1,700 as a site for a proposed school, subject to the approval of the Board of Education.

THE Sub-Gas Committee of the Leeds City Council have accepted the tender of Messrs. Leech, Goodall & Co. of £15,632 for a complete installation at Meadow Lane works of one bench of five beds of Dessau vertical retorts, with contained producers, having a total daily capacity of 1,100,000 cubic feet of gas.

THE DEVELOPMENT OF THE SOUTH YORKSHIRE COALFIELD AND THE HOUSING PROBLEM.*

THE problem of housing the immigrant population on the South Yorkshire coalfield is of a two-fold nature: (1) the temporary provision for a migratory class of workmen and their families—namely, pit sinkers, navvies, &c.; (2) the permanent provision for the collier population and those dependent upon them.

(1) *Temporary*.—This migratory population has, in the case of collieries which are being sunk in places remote from any village, been housed in wooden huts forming a village of from 300 to 400 workpeople and their dependents.

The sanitation of huts is of equal importance to the health of a district as that of permanent dwellings.

After a considerable experience of temporary dwellings, I have no hesitation in saying that the large employers of labour are anxious to meet one's suggestions with respect to them.

The difficulty in the matter of sanitary requirements of such a settlement is to differentiate between the essentials and non-essentials required in a dwelling which will only be occupied for four or five years at the most. The primary essentials are: A pure-water supply laid on to stand-pipes at convenient points. This provides for water being close at hand, and, on the other hand, prevents the waste of water which follows when water is laid on to each hut, and thereby curtails that excess of sewage which so often causes the difficulty in these places.

Efficient conservancy: These villages are provided with the pail-closet system, and it is on the due emptying of these at frequent intervals that so much depends. The company generally employ a special man for this sole purpose.

Recently a further step in the direction of improving the sanitation of these temporary dwellings has been adopted by the Rossington Main Colliery Company. On it being suggested to them that they might lay down their permanent sewage scheme, and use so much of it as might be required by the temporary village, they fell in with the suggestion and have now adopted it.

The general arrangement of a pit sinker's hut is as follows: The door opens on the living room, which is common to occupier, his family, and the lodgers. Here the food is cooked and the meals are served. At one end of this room a door gives access to the lodgers' bedroom, which may or may not be divided up into cubicles. At the opposite end of the hut are the private rooms of the tenant, who is usually a married foreman. The pit sinker earns "good money" and lives well. From ten to sixteen men usually board in one hut.

In addition to the provision for housing the workpeople by the colliery company, there has come into the district the man who follows the works of public construction from place to place with a rickety hut, whose old and weather-beaten timbers are, like the wrinkled face of an aged beauty, plentifully bedaubed with paint.

This he erects at some convenient spot. The control over these places is very difficult, although the proprietor usually builds the hut with very little regard to the laws of ventilation or sanitation, and is not above poaching on the preserves of the common lodging-house keeper; yet, when once he has become established, public sympathy would, I fear, be on his side if the medical officer of health were to insist on his putting his house in order.

The medical officer of health in these matters finds himself in a somewhat similar position as the old "preventive" officer was in the good old days of smuggling and cheap brandy with regard to the amount of public support and sympathy he can command.

A most remarkable fact connected with this large influx of a floating population of pit sinkers, navvies, and general labourers, is that there has not been a single case of small-pox since the year 1905.

(2) *Permanent*.—The housing of the permanent colliery population has of recent years attracted considerable attention owing to the fact that Sir Arthur Markham, Bart., M.P., has built for the employees and their families at the Brodsworth Main Colliery a model village called Woodlands.

Though this model village has largely occupied the atten-

* Abstract of Paper read before the York Congress of the Royal Sanitary Institute by Mr. Arthur Dunne, B.A., M.B., B.C.Camb., D.P.H.Lond., Medical Officer of Health for the Doncaster Rural and Bentley Urban Districts (Member).†

tion of those interested, there are several other model villages built or under construction at Edlington, Bentley, Askern, and Owston, which embrace most of the good features of Woodlands and others which are even better.

As, however, Woodlands is a happy example of the way in which the great colliery companies are providing villages for their employees in this area of the South Yorkshire coalfield, a description of it will give the chief points of all of them.

WOODLANDS.

This model village lies four miles north-west of Doncaster on the Great North Road; it is situated in the parish of Adwick-le-Street. It is built on a limestone plateau, 120 feet above sea-level. The present village comprises 850 houses, and the number of houses to the acre varies from five to eight in the two portions of the village.

The first portion of the village was erected in June 1907. Here the houses are built round a large village green. The Park, as it is called, with its fine old timber and twelve acres of grass, forms a very pleasing feature of the village.

In the extension of the village to the north of the Park the streets are laid out in broad avenues and crescents, along which trees have been planted. Between the adjacent crescents there are large open greens. The only criticism one would offer is that with so much space it is a pity that no small garden spaces have been added to these houses at the back. The houses are built in the half-timbered style, with pebble dash and red tiles to the roof. There are three types of houses with respect to accommodation:—

1. Three bedrooms, large living room, scullery, and larder. Rent 5s. 3d. per week.
2. Three bedrooms, living room, parlour, larder, scullery, and bath. Rent 6s. per week.
3. Three bedrooms, bath-room (with hot and cold water), living room, parlour, and scullery. Rent 6s. 6d. per week.

All the houses have water laid on to them, and are provided with water-closets and sanitary ashbins.

The conformation of the site of the colliery village facilitates the disposal of the sewage, which is dealt with at the sewage outfall works at a spot remote from the village. The company undertakes the scavenging of the village, and employs men solely for this purpose.

It is unfortunate that the deliberation and discussion which are essential before the local authority can obtain sanction for schemes for the purposes of providing sewage disposal works and works of public water supplies are out-distanced by the rapidity with which these large collieries are being developed, and the attendant districts around each of them.

These districts present unusual opportunities for putting into force the town planning sections of the Housing, Town Planning, &c., Act, 1909. No scheme has, however, been yet submitted to the Local Government Board.

The development is taking place at such an extraordinarily rapid rate that it cannot be wondered that the administrative machinery which, under ordinary circumstances, was quite fitted to cope with the demands on a local rural sanitary authority, has been left somewhat behind in the race.

The South Yorkshire coalfield which is now being developed all around the town of Doncaster is destined, in the opinion of colliery magnates, to become the great coal-producing centre of the future.

Lord Aberconway, whose position in the colliery world gives such weight to his utterances on the subject, has recently stated "that the South Yorkshire coalfield will in a few years increase its output of coal by 12,000,000 tons per annum." Assuming that the output of coal per man per annum remains at the present figure (namely, 263 tons), this will mean that within ten years there will be employed in this district an additional 45,000 men and boys.

With these brief remarks on this most remarkable industrial development of our time and its attendant problems, which will require to be carefully studied and solved by all concerned, I venture to predict that a more humane and rational environment for the collier and his family will bear rich fruit in future generations.

Mr. Brodie (Blackpool) confessed that he was envious at the splendid problems which those concerned in the district dealt with were called upon to solve. Here they had a condition of things to which the only parallel was the gold-mining towns of the colonies. It presented a unique opportunity for putting into practice those theories with regard to town planning which had been so much talked about, and if the opportunity was taken advantage of it would show that their discussions had not been mere words.

If they could get houses with three bedrooms let at 5s. 6d. a week then financially there ought to be no difficulty about the matter. He trusted that some day a future Congress would be able to see what had been achieved.

Mr. W. P. Costain (Great Crosby) said he had been round the district, and could see the absolute necessity for a town planning scheme. What they saw gave the lie to the suggestion which had been made in another paper with regard to spreading the manure on the ground, for in the district there were hundreds of privy middens, and they saw them in all their hideousness. In the village of Woodlands everything seemed in the highest order.

Dr. Thomas E. Francis, M.O.H., Llanelly Urban District, said he formed one of the party which Dr. Dunne had kindly shown over the Doncaster coalfield. He came from a district, namely South Wales, where colliery developments had also been very great, and much could be learned in the development of the South Wales coalfield that would be useful in this discussion. The South Wales coalfield had developed slowly, and there they had an advantage which they had failed to take full advantage of, as was seen in the present condition of the colliery towns and villages. He wished to make some suggestions that would make progress easier in the future—viz. (1) The consolidation with amendments of the Public Health Acts, which was an urgent matter, and it would be helpful if the law was uniform in England, Wales, Scotland, and Ireland. (2) The simplification and shortening of procedure under the Procedure Regulations of the Local Government Board under the Housing, Town Planning, &c., Act, 1909. In his district it had been found simpler to carry through a town planning scheme by agreement between the landowners concerned than by the Town Planning Regulations. (3) The need of uniformity in the by-laws of the various urban and rural authorities throughout the kingdom, as far as was compatible with the local conditions. He offered the suggestion that it might be possible to take some by-laws upon which there was general agreement, and insert them in the Consolidated Public Health Act mentioned above. He was much afraid of the movement now afoot to slacken considerably the requirements of the model by-laws of the Local Government Board and other by-laws, such as height of bedrooms, model by-laws respecting which had not been yet made.

Dr. Dunne, in reply, said that at a public meeting it was suggested that the surveyors should draw up a town planning scheme, and that was where they seemed to stand at present. He thought each authority should proceed with a scheme for its own locality, because if they tried to drive a dozen horses in their town planning scheme they would probably find themselves in a ditch, or more probably would never even get the harness on.

THE BATTLE OF STYLES AT DELHI.

BEFORE the end of the year the Government of India will be installed in the temporary buildings outside the old city of Delhi, and one of the first measures to be considered when the Viceroy's Council gets to work in its new surroundings will be the Bill making provision for the planning of the new city. The laying-out of the main roads and the choice of sites for the public buildings should be a comparatively simple matter; it is, says the *Manchester Guardian*, the question of the architectural style that is to rule in the new capital which has set the official authorities and the artistic enthusiasts in opposing camps.

Shall the new Delhi be European or Indian, Renaissance or Indo-Saracenic; or shall it be neither one nor the other, but a further and overwhelming exhibition of those affrighting hybrids known throughout India as the masterpieces of the Public Works Department? These questions, which have been vigorously debated since the Delhi Town Planning Commission went out from England last winter, were raised in the first instance by Mr. E. B. Havell, formerly principal of the Government School of Art, Calcutta, known in England and in India as a learned and resolute champion of Indian art and its ideals. The Public Works Department, Mr. Havell pointed out, would begin at Delhi with a clean slate. The commercial atmosphere of Calcutta has been left behind; the makers of the new city would find themselves in the heart of Hindustan, surrounded by the finest examples of Mogul design, and having at hand numbers of Indian master-builders who, as Fergusson said, could teach more of the true art of building than all the European books, and who, moreover, had never broken with the great Indian tradition. These men and the thousands of Indian craftsmen in other cities have been systematically ignored by the Public Works De-

partment, but their skill and knowledge remain, and it is now open to the Government of India to show its sense of an unequalled opportunity by making an end of the philistine indifference of the offending Department by setting its architects to work, in frank co-operation with Indian master-builders, towards the making of a metropolis which shall be Indian both in form and spirit.

In British India all official building has, from the beginning, been entrusted to the Public Works Department, and until Lord Curzon's day it was carried out under the supervision of engineers self-taught in architecture and unacquainted for the most part with Indian art and crafts. The results are patent and notorious. Engineer-architecture is to be seen all over the country, in hideous secretariats, court-houses, town halls, and official residences, and indirectly in colossal palaces of Indian princes and mansions of wealthy merchants and landlords. For in India the official influence is despotic. Whatever the supreme Government does in the region of taste and social life must in the eyes of the Indian people, and especially of their leading men, be right. And so it comes about that if there is anything worse than the masterpieces of the Public Works Department in the Governmental centres it is to be found in the outrageous palaces of Maharajahs and Nawabs, wherein the wildest licence has been given to Italian Renaissance or nineteenth-century anarchy. The engineer-architect doubtless did his best, but Lord Curzon recognised the absurdity of the practice by which the Government of India merely ignored the architect's profession, and for the past decade or so Simla has had its consulting architects. They were, however, appointed from England, they are men of purely European training, and, consequently, though professionally in advance of the Public Works Department, they cannot be counted any better than the engineers so far as knowledge of Indian architecture, structural tradition, and craftsmanship is concerned.

The advocates of an Indian Delhi have, therefore, a very definite case. They quote all the prophets of the modern art movement in proof of the thesis that architecture must be the product of a vital art tradition; they point to the undisputed break with tradition in Europe 300 years ago and the chaos of the past century or two, and they take their stand upon the declaration of James Fergusson, the eminent historian of Indian architecture:—

"Architecture in India is still a living art, practised on the principles which caused its wonderful development in Europe in the twelfth and thirteenth centuries, and there, consequently, and there alone, the student of architecture has a chance of seeing the real principles of the art in action."

Mr. Havell and those who share his views are convinced that this is as true to-day as it was when Fergusson wrote it half a century ago, and they score heavily against their opponents by citing the avowals of prominent official architects. Thus the author of a full and careful survey of the subject which appeared a short time ago in the "Dawn" magazine of Calcutta makes effective play with the admissions of two consulting architects to the Government of India, Mr. James Ransome and Mr. John Begg, in support of his case.

India knows what it means for the European architect, confessedly ignorant of the Indian tradition and Indian structural principles, to have unfettered freedom. She has seen it in many cities, and notably in Calcutta—in secretariats of what has been called the Neo-Victorian workhouse style, a High Court in florid Gothic as nearly as possible like the celebrated Town Hall of Ypres, newer Government buildings in the manner of a more pretentious Whitehall, and a Victoria memorial which, when completed, may disclose the combined features of the War Office and the South Kensington Museum.

The specific answer of the official party to the demand for an Indo-Saracenic Delhi is twofold—first, that it would be a merely archaeological revival, as unreal as Georgian Greek or Pugin Gothic; secondly, that it would be both impracticable and ruinously expensive. The builders of the great Hindu and Mogul epochs, say the official architects and their organ, the *Pioneer* of Allahabad, were concerned with the simplest structural forms—the temple, the mosque, the tomb, the "serai." They could not have met the complex demands of present-day India for Government offices, law courts, Council chambers, official residences; nor could they, without unrestricted command of time and human labour, have achieved their magnificent results—designing like Titans, finishing like jewellers. Essentially, the reader will note, this objection is based upon the assumption that the Indian tradition is dead, and that assumption, of course, is precisely what the

other side denounce as the fatal blunder of the Government in India yesterday and to-day. Why, demands Mr. Havell—

"Why should it be more difficult for professionally trained European architects to adapt the living traditions of Indian building to modern departmental needs than it was for the amateur Court officials who controlled the Mogul architectural works to make use of Hindu builders in carrying out Mahomedan ideas of building? There is no reason, except a deplorable lack of imagination."

The contention that Indian building styles cannot be adapted to current utilitarian requirements is, adds Mr. Havell, "merely a confession of departmental incompetence." And there, for the present, the controversy stands.

BRITISH FIRE PREVENTION COMMITTEE.

THE British Fire Prevention Committee opened its autumn session on the 25th ultimo with two important series of official fire tests, which have been accorded the closest possible attention by the various public authorities concerned, comprising as they did, first, a series of twenty tests with ordinary celluloid cinematograph films versus a non-inflammable celluloid film, and, secondly, an extensive series of some twenty-five fire tests as to the possibility of extinguishing petrol fires, celluloid fires, and similar outbreaks by the application of chemical foam.

The numerous visitors were received by the Chairman of the Committee (Mr. Edwin O. Sachs, F.R.S. Ed.), the Earl of Lonsborough, K.C.V.O., Sir John Cockburn, K.C.M.G., Major Cooper-Key (Chief Inspector of Explosives), Mr. Ellis Marsland (General Hon. Secretary), and other members of the Council, whilst the actual tests were conducted by strong sub-committees, with Mr. Horace Folker, F.A.I., and Mr. D. W. Wood acting as directing members.

The importance of the tests may be gauged from the fact that the Army was represented by no less than fourteen officers, including Colonel Sir H. W. Barlow, Bart., of the Royal Laboratory, representatives of the Royal Arsenal, the School of Military Engineering, the Balloon Factory, the Air Battalion, Army Service Corps, &c., the Admiralty by a number of officers and engineers, the Home Office by officials from the Explosives and Factory Departments, H.M. Office of Works by its engineering officials, the Board of Trade by its Engineer Surveyor-in-Chief, the Colonies by Captain Muirhead-Collins, R.N., for the Australian Commonwealth, and other officials of South Africa and New Zealand, the India Office by Lieut.-Colonel Muspratt-Williams, R.A., and Mr. Martyn; whilst institutions such as Trinity House, Lloyd's Register of Shipping, the London County Council, the London Port Authority, the Metropolitan Asylums Board, and other corporate bodies were represented by their leading officials, as also ten leading railway companies and ten insurance institutions.

Other notable visitors were Count de Saint Seine (the French Naval Attaché) and the German Consul and Vice-Consul.

At this stage it would be inappropriate to give the results of the official tests, as reports will not be ready for some little time, but it has been authoritatively stated that both series were of an eminently instructive character, and mark a practical step forward in the direction of fire-preventive measures.

IRON AND STEEL OF ANCIENT ORIGIN.*

SECTION B.—THE SO-CALLED IRON AND BRONZE AGES.

(Continued from last week.)

IN a most excellent sketch of the history of iron in his "Metallurgy of Iron and Steel" (1864), Dr. John Percy, F.R.S., stated, as the author has already pointed out, that iron is so rapidly corroded and wasted away by the oxygen of the air, even in dry climates, that it is not to be wondered at that only few ancient specimens have remained preserved.

Dr. Percy also believed that from metallurgical considerations it is not unreasonable to suppose that the so-called Age of Iron preceded the Age of Bronze, or, if not, was concurrent. The metal of the latter age required more skill to produce than iron, whose process of production in its simplest forms is not so difficult. As Dr. Percy points out, if a lump of red or brown hematite be heated for some time in a charcoal fire, well surrounded by or embedded in the fuel, it will be more or less completely reduced so as to admit of being easily forged at a red heat into a bar of iron.

* Abstract of a Paper by Sir Robert Hadfield, F.R.S. (Sheffield), entitled "Sinhalese Iron and Steel of Ancient Origin," read before the Iron and Steel Institute at the annual meeting.

Singular to say, the author cannot find even one analysis of an ancient iron specimen by Dr. Percy, whose eminence in the metallurgy of iron and steel during the last generation was renowned, thus showing that specimens of such material were indeed *rara aves*. The author therefore believes that the ancient specimens now described for the first time represent an accurate analysis of ancient iron, in this case made about 1,400 years ago. They also probably represent the type of material produced at a much earlier date.

Mr. St. John V. Day's "The Prehistoric Use of Iron and Steel," published in 1877, and Beck's *Geschichte des Eisens* (1903), in five volumes, covering no less than about 6,000 pages, are both remarkable books on iron and steel in reference to their past history.

Day believes, with Dr. Percy, that the use of iron has a very ancient origin, and preceded the so-called Bronze Age. Day says "that the earliest of substances with which man was acquainted was unquestionably iron, and almost certainly steel; . . . and that this is true whether we look to Egypt, Babylonia, or Proto-Chaldea and Assyria, on the one hand, or China on the other."

Day points out that iron has been discovered in the Great Pyramids, the oldest buildings known to men.

Lepsius, an Egyptologist of the highest rank, says that, "considering the frequent working of granite in large masses, which can be proved near the fourth Manethoic dynasty, it cannot well be doubtful that since that time, and indeed earlier, iron and the hardening of it were known."

Many tablet pictures show workers wielding tools which could not very well be those other than of iron or steel, and Maspéro, in the interesting recent correspondence with Osmond, referred to in this paper, admits the wall pictures of Egypt show workers handling tools which were surely of iron or steel.

Dr. Percy, therefore, seems fully justified when, in writing to Mr. Day, he makes the following important statement:—"I become more and more confirmed in my opinion that archaeologists have been generally mistaken concerning the so-called Iron Age. I am collecting information on the subject from time to time, and as yet have met with nothing in opposition to the opinion above mentioned."

Professor Max Müller, so Day points out, stated that "in the Homeric times knives, spear points, and armour were still made of copper; and we can hardly doubt that the ancients knew the process of hardening that pliant metal, most likely by repeated smelting and immersion in water." The author quite agrees with Day that such a statement on the face of it cannot be correct, for copper is not hardened by immersion or cooling in water, but, on the contrary, it is softened. Moreover, no one has yet been able to harden copper in the manner that iron does when combined with carbon. If such an art had been known, it is difficult to imagine that the knowledge would have been entirely lost; it would have been too valuable. The world has yet to discover a method of hardening copper, in the sense of producing a material which can be compared with hardened steel. Alloys of copper with tin and other elements are well known, but their qualities render them unsuitable for purposes where iron and steel are used.

In the same manner Day, rightly, the author thinks, took the late Right Hon. W. E. Gladstone to task with regard to his laborious investigation of the Homeric epic, when announcing "the age of copper is the first and oldest of the metallic ages, which precedes the general knowledge of the art of fusing metals."

SECTION C.—INDIAN AND SINHALESE IRON AND STEEL.

As bearing upon this subject of Indian metallurgical knowledge in 1837 and 1839, Mr. J. M. Heath contributed two interesting papers on Indian steel to the Royal Asiatic Society.

The author's views entirely coincide with those expressed by Heath nearly three-quarters of a century ago—namely, that the great works of stone in Egypt were undoubtedly carried out by means of iron and steel tools.

Heath's remarks are so interesting that the author quotes them in full, as follows:—

"The antiquity of the Indian process is no less astonishing than its ingenuity. We can hardly doubt that the tools with which the Egyptians covered their obelisks and temples of porphyry and syenite with hieroglyphics were made of Indian steel. There is no evidence to show that any of the nations of antiquity besides the Hindoos were acquainted

with the art of making steel. The references which occur in the Greek and Latin writers on this subject served only to better their ignorance of it; they were acquainted with the qualities and familiar with the use of steel, but they appear to have been altogether ignorant of the mode in which it was prepared from iron. The edges of cutting instruments of the ancients were all formed of alloys of copper and tin, and we are certain that tools of such an alloy could not have been employed in sculpturing porphyry and syenite.

"Quintus Curtius mentioned that a present of steel was made to Alexander of Macedon by Porus, an Indian chief, whose country he had invaded. We can hardly believe that a matter of about 30 lb. weight of steel would have been considered a present worthy of acceptance of the conqueror of the world had the manufacture of that substance been practised by any of the nations of the West in the days of Alexander.

"In view of the maritime intercourse between Egypt and the East, it appears reasonable to conclude that the steel of the South of India found its way by these routes from the country of Porus to the nations of Europe and Egypt."

Heath states, therefore, that "the claim of India to a discovery which has exercised more influence upon the arts conducing to civilisation and the manufacturing industry than any other within the whole range of human invention is altogether unquestioned."

In his papers, Heath also points out that Dr. Buchanan's "Travels in the South of India," published in 1807, contains very minute and correct accounts of the native process of smelting iron and making it into steel, this process probably representing practice handed down from previous ages. The book is illustrated by engravings.

Without doubt, therefore, the processes of making iron and steel have been used in India for many thousands of years. Probably the ancient specimens seen by the author at Colombo were not produced by the crucible process, but that the crucible process has been used in Ceylon for a long period of time may be taken as established.

This would also carry with it the proof that while the Huntsman process was novel as regards application in Great Britain, and, of course, worked out on a more practical and commercial system than the methods of the East, yet it was, after all, only a development of methods, or an independent comparatively modern discovery of methods, long employed in India.

The manufacture of this crucible cast steel by the Sinhalese is now, however, almost an extinct industry, a fact due to the operation of economic laws, as steel can be imported from Europe more cheaply than it can be manufactured locally.

SECTION D.—DELHI AND DHAR PILLARS IN INDIA.

One of the most notable ancient specimens of iron is the famous Pillar of Delhi, which is not the less interesting when we find it is stated that the city itself, "Imperial Delhi, the capital of all India," as Sir Alexander Cunningham in 1864 termed it, owed its name to this pillar. In the light of recent political events, this prophetic utterance is now an actually accomplished fact, for on December 12, 1911, Delhi was made the capital of our great Indian Empire. We have also this remarkable chain of circumstances. Delhi took its name from the very pillar now described, the Hindoo term being "Dhelli," or unstable, as explained later on. At Delhi King George V., the first English monarch to be present in person, has been proclaimed Emperor in Durbar, and finally, Delhi is now the seat and actual "Capital of all India."

Ancient associations, historical and legendary, combine to invest Delhi with exceptional dignity in the eyes of both Hindoo and Mohammedan Indians.

In the official Government despatches of last year it was stated that "Delhi is still a name to conjure with; it is intimately associated in the minds of the Hindoos with sacred legends which go back even beyond the dawn of history."

As shown in this paper, seeing that Delhi itself takes its name from the Iron Pillar, and that it is now the capital of our Indian Empire, with its three hundred millions of inhabitants, this particular article of iron is of more than ordinary interest. In view of its importance, what follows may, therefore, be of interest. There was formerly a plaster cast or model of it in the Victoria and Albert Museum in 1873. The author spent some time in trying to find this at South Kensington, but finally discovered that it was, unfortunately, destroyed during a fire in 1885, and has never been replaced.

In the *Archæological Survey of India*, page 169 (four reports made during the years 1862-65), Sir Alexander Cunningham, C.S.I., &c., states that one of the most curious monuments in India is the iron pillar at Delhi. Whilst there are many large works of ancient times in metal, for example the Colossus of Rhodes, the gigantic statues of the Buddhists, and others, these were of brass or copper, all of them hollow and built up of pieces riveted together, whereas the Pillar of Delhi is a solid shaft of wrought iron, upwards of 16 inches in diameter, and 22 feet in length, welded together, although the welding is not altogether perfect. In any case, it was a very creditable piece of work for a metallurgist of at least 1,600 years ago. At one time, owing to its peculiar colour or hue, it was thought to be of "mixed metal" or even bronze, this belief probably arising from the curious yellow appearance of the upper part of the shaft, which Cunningham says he himself observed.

He adds that he obtained a small fragment from the rough lower part of the pillar, which was submitted to Dr. Murray Thompson of the College at Roorkee for analysis, who informed him that the metal was "pure malleable iron of 7.66 specific gravity." Practically pure iron (99.87 per cent. iron) has a specific gravity of 7.8477. Therefore, the material of this pillar could not have been pure. Probably it was a somewhat inferior type of wrought iron, permeated with slag, and high in phosphorus, like the Sinhalese specimens described by the author in this paper. Pure iron, having the specific gravity mentioned, would weigh 490 lb. per cubic foot; the Delhi Pillar, with 7.66 specific gravity, would weigh 477 lb. per cubic foot.

(To be continued.)

COMPETITION NEWS.

CHORLEY.—The Education Committee have appointed Mr. J. Brooke, F.R.I.B.A., of Manchester, as assessor of the designs submitted for the proposed Council School.

READING.—The Education Committee are preparing conditions for the competition for the proposed new buildings of the Kendrick Schools. Premiums of 70 guineas and 30 guineas will be offered. Mr. Ernest Newton, F.R.I.B.A., will, as we have already stated, act as assessor.

WIGAN.—The Education Committee at their last meeting referred back a recommendation that Mr. W. C. Ralph, F.R.I.B.A., be appointed as architect for the proposed High School for Girls. The Chairman of the committee stated he had a letter signed by four different architects protesting against the appointment, and it was eventually decided that the appointment be thrown open, the committee to arrange the details of competition.

NOTES ON BOOKS.

"The Principles of Structural Mechanics Treated without the Use of Higher Mathematics." By Percy J. Waldram, Lecturer on Structural Mechanics, Architectural School, Central School of Arts and Crafts, London. (London: B. T. Batsford. 7s. 6d. net.)

This is one more effort to make intelligible to the ordinary architectural student the methods of calculating the strength of structures with which he has to deal, and the basis of it appears to be the use of experimental investigation, as applied by the author at the L.C.C. Central School of Arts and Crafts. The student is strongly recommended to learn the principles and prove their application by experiment, and the use of spring balances, cords, weights, and pulleys for experimentally demonstrating and determining the accuracy and amount of forces, loads and stresses in constructive problems is well explained. These are admirable methods for teaching students in a class, but we agree with the author when he says that whilst private experimental work will teach a great deal, to most men its range is extremely limited. He goes on to say "the author's experience tends to show that by far the best method of thoroughly learning the subject consists of a complete course of experimental research, involving the actual measurement of forces, stresses, and strains by the student, coupled with clear explanations and frequent and well-supervised exercises in practical design."

The author's fondness for demonstrating calculations by means of apparatus is possibly the reason for his exposition of the operation of the slide rule, although for all practical purposes this instrument may be regarded as obsolete as a sundial. We recognise that the slide rule permits of logarithmic calculations in simple fashion, but its limitations prevent it from comparing in utility with a table of logarithms for indoor use. It may still be of

some value for those who desire to make logarithmic calculations with an instrument which they can carry in their pockets.

In introducing the subject of graphic statics the author does well to point out the limitations of graphic methods of calculation, but we are not disposed to agree with his assumption of the accuracy of what he calls abbreviated methods of calculations—that is, calculating by means of models made of light laths, spring balances, and loops of string. We think that his statement that "All the stresses and reactions for any loading of the model being known through the medium of the different spring balances, the accuracy of diagrams drawn for the purpose of calculating those stresses and reactions can be readily tested" is too optimistic, because the weight of even light spring balances must have an appreciable effect on the distribution of stresses in the model polygon, although this element of error is not perhaps of particular importance when models are used merely for the purpose of demonstration.

The author's explanation of the theory of moments and their graphic representation is excellent, and should be clear to the dullest student. His illustration of the bending moment of the load on a beam as equivalent to those of a double cantilever is particularly happy as a method of explaining the fact which is usually difficult to grasp—that it is the reaction that makes the bending moment. Other difficult subjects for the novice to comprehend, but which Mr. Waldram to our mind makes clear and easy, are the radius of gyration and the method of sections, and on the whole we can confidently recommend this book to the student to whom calculations are more or less of a bugbear.

BOOKS RECEIVED.

"Colour in the Home, particularly as applied to the Industrial Arts. With Notes on Architecture, Sculpture, Painting, and upon Decoration and Good Taste." By Edward J. Duveen. With forty-six full-page illustrations, of which thirty-four are in colour.

(London: George Allen & Co., Ltd. 42s. net.)

"Black's Modern Guide to Harrogate." Edited by Gordon Home. With twelve illustrations in colour facsimile, a plan of Harrogate, maps of the district, and four other plans.

(London: A. & C. Black. 1s. net.)

"Southern England. Coast and Countryside. Kent, Sussex, Hants, the New Forest, the Isle of Wight, Wilts, &c." The Homeland Reference Books. No. 5. Edited by Prescott Row and Arthur Henry Anderson.

(London: The Homeland Association, Ltd. Frederick Warne & Co. 1s. net.)

"Surveying and Surveying Instruments." By G. A. T. Middleton, A.R.I.B.A. Third edition, revised and enlarged.

(London: Whittaker & Co. 5s. net.)

"Building Construction." A text-book on the principles and details of modern construction, for the use of students and practical men. By Charles F. Mitchell, Lecturer on Building Construction to the Polytechnic, Regent Street, London; Headmaster of the Polytechnic Technical School, &c., assisted by George A. Mitchell, A.R.I.B.A. Advanced and honours courses. Seventh edition, thoroughly revised and much enlarged.

(London: B. T. Batsford. 6s. net.)

"The Cheap Cottage and Small House." A manual of economical building. By J. Gordon Allen, A.R.I.B.A., &c. Second edition. (Letchworth: Garden City Press, Ltd. Paper, 1s. 6d.; cloth, 2s. 6d. net.)

"English and Welsh Cathedrals." By Thomas Dinham Atkinson, architect. With twenty illustrations in colour by Walter Dexter, R.B.A., twenty in monochrome, and forty-eight plans.

(London: Methuen & Co., Ltd. 10s. 6d. net.)

"Practical Cabinet Making and Draughting." By J. H. Rudd.

(London: Benn Bros., Ltd. 4s. 6d.)

"Papers of the Paint and Varnish Society, 1910-11." Edited by the Secretary. (London: The Paint and Varnish Society.)

The Architect.

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FORTHCOMING EVENTS.

Monday, October 14.

Architectural Association : Inaugural Address by Mr. G. C. Horsley, F.R.I.B.A., President, and Distribution of Prizes, at 8 P.M.

London Association of Municipal Engineers : General Meeting at 7.30 P.M.

Tuesday, October 15.

Institution of Municipal Engineers : Eastern District Meeting at Godmanchester.

Thursday, October 17.

Society of Architects : Annual General Meeting at 8 P.M.

London Association of Master Decorators : Annual Dinner at 8 P.M.

London University : Course of Lectures on "French Renaissance Architecture" by Mr. W. H. Ward, M.A., F.R.I.B.A., at University College, London, at 6 P.M. (2) "The Beginnings of the Renaissance in France. The Italian Craftsmen. Charles VIII. and Louis XII."

HISTORICAL MONUMENTS IN BUCKINGHAMSHIRE.*

THE Royal Commission entrusted with the duty of making an Inventory of the Ancient and Historical Monuments and Constructions connected with, or illustrative of, the contemporary culture, civilisation, and conditions of life of people in England (excluding Monmouthshire) from the earliest times to the year 1700, and of specifying those which seem most worthy of preservation, have now issued their first volume* on the Historical Monuments of Buckinghamshire, which county has for the purpose of the Inventory been divided into North and South.

The present volume deals with the Southern portion, and includes the hundreds of Stoke, Burnham, Desborough, Aylesbury, and parts of Ashendon and Cottesloe. As with the initiatory volume of the Royal Commission's Inventory dealing with the Historical Monuments of Hertfordshire, the book now issued forms a charming and interesting record of the antiquities of South Buckinghamshire, not merely from the archæological and antiquarian point of view, but from an artistic or architectural point of view.

Valuable as an inventory the book is also highly interesting and instructive as a picture book, containing a large number of very excellent photographs, besides plans drawn to scale.

Buckinghamshire, notwithstanding its proximity to London, is little known to architectural students, and those who are domiciled in the Metropolis will be agreeably surprised to find from the excellent illustrations in this volume the amount of admirable and instructive work of all periods, within the scope of the Commission, that is to be found within the limits of a Saturday half-holiday excursion.

The sectional preface epitomises records of the monuments under various headings. Earthworks are comparatively unimportant, and of 128 examples over 100 are homestead moats, tumuli, or other works of minor importance.

Roman remains are also somewhat rare, and the Inventory records in all no more than ten dwelling-houses, large and small together.

The building materials of South Buckinghamshire, principally used in ecclesiastical and secular architecture, are flint, stone, brick and half-timber, and the preface

groups together the more important examples of the use of each of these materials, so that the student of treatment of material can at once find out where to go.

On the historical side, ecclesiastical buildings are chiefly of early work, nearly half the old churches containing remains of the twelfth century.

There is a considerable amount of good thirteenth and fourteenth-century architecture, but we are told that good work of the fifteenth century is more difficult to find, although the nave arcade of High Wycombe and the choir of Eton College Church stand out as specially noteworthy.

The photographs indicate that as a general rule mediæval ecclesiastical work is in South Bucks of good quality and a safe subject of study for young architects.

The only considerable traces of monastic remains in South Buckinghamshire are in buildings that once belonged to the Augustinian order, at Burnham, Long Crendon, and Great Missenden; but there is a fair amount of domestic work, both town and country, which not being of the greatest magnitude is perhaps the more valuable to the student. Although there are no good examples of cottage architecture of an early date, there are a large number of small houses at least as early as the sixteenth century. Many of these are of rectangular plan, with two rooms on each floor and a central chimney-stack. L-shaped plans are also common, and every possible modification of both types is to be found.

A farmhouse at Brill, which is illustrated, is a good example of small work of the seventeenth century, and a house at Chilton, dated 1683, illustrates a plain rectangular plan common about that date.

There are a number of small buildings of the same period throughout the district, which are enumerated in the Inventory, and these form a useful field of study for the designer of small houses, which in the present day seem to provide the largest portion of the work that is likely to fall into the hands of the young architect, not to say of many of his seniors.

A page of illustrations reproduces photographs of small houses at Ashley Green, Brill, Penn, Wyrardisbury, Great Marlow, and Chesham, which might have been designed, save for their evidence of the wear and tear of time, by Mr. E. L. Lutyens.

The notable fittings still preserved in churches, houses, and elsewhere are of course enumerated in their proper place in the Inventory, and in the index a full list of those recorded is given, whilst in the sectional preface special mention is made of some of the more remarkable of these. We are told that only two pre-Reformation altar stone slabs remain intact, and that of a total of five bells known to have been made by Michael de Wymbis,

* *Royal Commission on Historical Monuments (England) : An Inventory of the Historical Monuments in Buckinghamshire. Vol. I. Anno Dñi. M.C.M.XII. (London : Published by His Majesty's Stationery Office. To be purchased, either directly or through any bookseller, from Wyman & Sons, Ltd., Fetter Lane, E.C.; or Oliver & Boyd, Tweeddale Court, Edinburgh; or E. Ponsonby, Ltd., 116 Grafton Street, Dublin. 15s. 6d.)*

who worked in London about 1300, three are to be found in South Buckinghamshire. The most important brasses in the county are also pointed out, and the most noteworthy examples of chairs, chests, and cupboards particularised.

Examples of some of the curiosities of church building are to be found in this part of the county, such as the consecration crosses, Easter sepulchres, and low side-windows. Then we find an illustration of an oak arch in the church of St. Lawrence, Upton, Slough, a thirteenth-century piece of work, in which the form of mouldings and dog-tooth ornament customary in stone are reproduced in wood; thus the seeker for curios will find material in the Inventory, as well as the student of art.

One of the most valuable features which is to be found both in the Hertfordshire Inventory and the present volume is the admirable method in which the index is compiled. This contains not only references to places and individuals, but also collected lists of special features; thus by reference to the index, if one wishes to know where there are to be found examples of alabaster figures and monuments in churches we find a list from which we can see where they remain, together with their date. So also we may look for arabesque work, barge boards, barns, bay windows, bell turrets, bench ends and fronts, chimneys and doorways—in short, any particular grouping which we may desire to study.

We referred earlier to the materials enumerated in the sectional preface, and in the index we find the examples of these carefully collated, so that we can tell at once where to find ashlar, brick, either ordinary or rubbed, chalk, and other kinds of stone, wattle and daub, and the local material witchert.

The lover of heraldry will revel in this volume, when he finds that the index contains four pages of reference to examples that are to be found preserved in South Buckinghamshire.

These Inventories of the Royal Commission are thus not merely catalogues, but invaluable guides to students and lovers of the art and the history, the culture, the civilisation and conditions of life of our ancestors, and in particular no student of architecture, living in London or the home counties, could better spend fifteen shillings and sixpence than in purchasing volume one of the Inventory of the Historical Monuments in Buckinghamshire.

We look forward with eager anticipation to the appearance of volume two of the Inventory of Buckinghamshire Monuments and of that on the Monuments of Essex, which are next in order of the publications of the Royal Commission.

NOTES AND COMMENTS.

Is the discussion which has been in progress in the daily Press on the style of architecture to be adopted in the new Delhi, the advocates of an Indo-Saracenic design, as they call it, ignored the fact that there is no one dominant style which may be regarded as peculiar to India, and expressive of its nationality. There are a score or more of distinct styles, each of which can be called an Indian style, as any one of the many dialects spoken in the country may be called Indian. So that when the Government are asked to adopt the Indian style of architecture, it is incumbent upon those who make the demand to define what is that style. The examples of attempts to unite modern requirements, modern methods and modern finance, with forms of Indo-Saracenic architecture have already resulted in a sufficient crop of abortions, which have as much resemblance to the native architectural styles of India as the Alhambra of Leicester Square has to the Alhambra of Granada. We should not feel proud if the new capital of India were to be stocked with some more of these monstrosities.

There seems to be an idea in the minds of the advocates of the Indo-Saracenic style, that if Renaissance or Classic were adopted for the new Delhi, this would necessarily be

of the modified form which has prevailed in England since the times of Inigo Jones and Christopher Wren. It is forgotten that Classic styles of architecture took their rise in more southern latitudes than England, and accordingly they provide scope for a suitable architecture to be situated in a more sunny country than our own island. Thus there can be no reasonable objection to the suitability of Classic architecture for India. From the sentimental point of view we agree with those who hold that, inasmuch as British rule in India is not native but alien, it is logical that the Governmental architecture of the capital should also be of an alien type rather than Indian.

We are sorry to know that some of the bishops are voicing opposition to the inclusion of churches amongst ancient monuments. Possibly no class of memorials of the past have suffered more than our churches from the insufficiency of care which has been bestowed upon them by those in whose custody they have been for centuries. Carelessness, unwise zeal, and non-appreciation due to ignorance, have all contributed to the destruction, removal, alteration and so-called restoration of ancient monuments of ecclesiastical character. The Bishop of Lincoln says that church folk are blind if they do not see that their churches have an antiquarian interest of the highest value, and criminal if they do not safeguard these priceless treasures and keep them from injury. This is exactly the whole reason for the national protection of ancient monuments. Their custodians in the words of the Bishop have not safeguarded these priceless treasures in the past, and are therefore criminals. Legislation accordingly is necessary to prevent the repetition of the crime.

Sir Rider Haggard in writing in the *Daily Mail* about cottage building in our villages, rightly points out that it is impossible nowadays to build cottages which can be let at a rent which the tenants can afford to pay, but we do not think that he has quite grasped or at any rate expressed the reason why this should be so any more in the present than in the past. The difference seems to us to be that in the past the labourer's cottage was part of his wage. The land-owner built the cottages and let them at non-remunerative rents to workers on the land, so that they received their wages partly in coin and partly in house room. In those olden days there were many privileges which the farm labourer received as part of his remuneration—butter, milk and other things off the farm. Now under the leadership of trade union agitators the farm worker receives more money. The profits of farming and of the land will not permit of the farm labourer having a greater share than he had in the past, so that if he now takes in cash all the wages which agriculture can provide for him, no one can afford to let him have a cottage at half rent.

Sir Rider Haggard says, "the land, as distinguished from the towns of England, could I am convinced carry twice its present population to the great good and safety of the State," and he advocates that the State should find the money necessary for the adequate housing of the rural population and write off the inevitable loss. Certain it is that the State has managed its affairs so that agriculture is no longer a profitable industry, and if it is desirable in the interests of the State and town dwellers that agriculture cannot be allowed the conditions by which it can find prosperity on its own bottom, it is only right that agriculture should be subsidised by the State.

SCHOLARSHIP IN ARCHITECTURE AT ROME.

CANDIDATES who are eligible to compete in the open qualifying examination for the Scholarship in Architecture at the British School at Rome offered by the Commissioners for the Exhibition of 1851, particulars of which were announced in the *Times* on August 17, must apply in writing to the Hon. General Secretary, British School at Rome, 54 Victoria Street, London, S.W., for particulars of the subject set for the examination on or before October 31. The subject will be forwarded by post on November 5 to intending candidates, who must be careful to write distinctly in their applications their full names and addresses.

IGHTHAM.*

IGHTHAM MOTE, or, as it is variously called, The Mote, and The Moat House, occupies a somewhat unusual position for a place of its size.

It seems to have been generally customary for the nobles and squires of mediæval ages to build their castles and manors upon eminences, or at least on level ground; but this grand old moated manor house is situated in a rather deep and narrow gorge, almost concealed from view by the well-wooded greens and hills and crags that closely encompass it.

It is reached by a narrow road, bordered on one side by a wood, and upon the other by a streamlet which feeds a lake supplying water to the moat, which in turn by its outflow forms another small lake or pond and a stream that ultimately finds its outlet into the river Medway at Snoll Hatch, in the parish of East Peckham.

Many people suppose that the name Ightham Mote is derived from the moat surrounding it, but this opinion is based upon altogether insufficient data. At the probable time of its erection a moat was quite a common feature in the defensive scheme of any important dwelling, but the word mote was used in quite a different sense, and signified a meeting-place—for example, the Great Gemot or Parliament, the Sciregemot or Great Shire Council, the Wittenagemot or Council of the District, the Manor Mote, Porte Mote, and others; and as the De Hauts, the first authenticated owners of the property, were very powerful and overlords of the district, it is more than likely conclaves of importance,

and one on the north, the former approached by a stone bridge and the latter by a wooden one across the moat.

Very little is known of the earliest history of The Mote. The builder's name is lost in antiquity, and in the absence of authentic deeds and plans it is impossible to definitely state the exact age of much of the building; but fortunately it seems to have been almost continually in the hands of gentlemen of culture and discretion, and whenever restoration has become necessary such work has usually been carried out with due observance to the style of the part repaired; so therefore by carefully studying the various architectural features it is possible to estimate fairly accurately the date of any portion.

The oldest part now remaining is the western wall of the quadrangle, which possibly belongs to the twelfth century, but a very considerable part of the eastern side, including the hall, is undoubtedly fourteenth century, of about the time of Edward III.

Hasted in his "History of Kent" says "it belonged to Sir Ivo or Ivor de Haut in the reign of Henry II., and continued in his family for over 300 years." This, however, cannot be absolutely correct, because it is certain that Sir Thomas Cawne or Couen, who resided at Nulcombe Manor, in the adjoining parish of Seale, and who died in the reign of Edward III., left The Mote, together with all the lands he possessed in Egytham and Sherborne, to his son Robert, and there was at least one other alien ownership.

About 1377, however, the house seems to have been in



IGHTHAM MOTE.—NORTH-WEST CORNER OF QUADRANGLE.

bearing upon the government of the locality, were conducted here, and hence the name.

Be that as it may, The Mote as we know it at the present time is certainly one of the best, if not indeed the best, example in this country of a moated and fortified house of feudal times, evidently built when might stood for right, and constructed therefore so as not only to afford a place of residence and rest for its owner, but strongly enough to withstand a possible siege.

The moat is almost rectangular and nearly square, measuring about 174 ft. by 163 ft. The breadth varies between 16 ft. at the north-east corner to over 30 ft. at the south-west, and the water is from 3 to 12 ft. deep. The building itself rises directly from the water and is quadrilateral in plan, having an external measurement of about 126 ft. from east to west by an average width of 113 ft. from north to south. It is two-storeyed, the lower portion being chiefly of mixed stone and brick, while the upper is mainly half-timbered work, carried out in places beyond the lower building line upon brackets.

The buildings enclose an open courtyard and garden of about 76 ft. by 53 ft.

The principal entrance is on the western side, through a gateway beneath an embattled tower, to which access was formerly gained by means of a drawbridge, but which is now reached by a wide gravelled footway over a two-span arched stone bridge. There are two other entrances, one on the east

the possession of the De Haut family in the person of Henry de Haut, High Sheriff of the county, and in 1450 it was owned by Richard Haut, Sheriff of Kent, who was high in the favour of Edward IV., with whom indeed he was distantly related, his mother, Matilda Woodville or Wydeville, being an aunt of Edward's wife Elizabeth.

This gentleman fell upon evil days, for having joined the rising in favour of the Earl of Richmond, he was taken prisoner and executed at Pontefract. His estates were confiscated and given by Richard III. to Sir Richard Brackenbury, Governor of the Tower of London, some historians believe, as the price of his silence in the matter of the murder of the two young Princes. Brackenbury held the estate for rather less than two years, and after his death at the battle of Bosworth Field, it was once again restored by Henry VII. to the De Haut family, as represented by Edward, a son of the late Richard de Haut.

It remained in his family until 1521, when it passed by sale to Sir Richard Clement. This gentleman probably added much of the Tudor woodwork and completed the quadrangle by building the chapel. There is a brass in Ightham Church to the memory of his first wife, upon which a blank is left for the date of his own demise. The Clements possessed the property for some time, until a niece of Sir Richard's carried it by marriage to Hugh Pakenham, whose only daughter became heiress of The Mote. She married Sir William Sydney, the hero of Flodden Field; and her husband entered into an arrangement with her father whereby The Mote was alienated and sold to Sir John Allen, a former Lord Mayor of London, in 1544. After his death his grand-

* Read at a meeting of the Upper Norwood Athenæum by Mr. Hamilton E. H. Biden.



CHURCH OF ST. PETER, IGHTHAM.

son, Sir Charles Allen, sold the property to William, afterwards Sir William Selby, a younger son of Sir John Selby, of Branxton, in Northumberlandshire. He spent the later part of his life at The Mote, and died there in 1611, aged eighty years.

A nephew of the same name succeeded. He married Dorothy Bonham, resided at The Mote, and there breathed his last in 1638. The tombs and effigies of both these gentlemen, together with that of the widow of the latter, are in the church at Ightham. The widow, Dame Dorothy, was in possession until her death in 1641, when it passed to Mr. George Selby, of London, who resided there and was Sheriff of the county in the reign of Charles I. He died in 1667, and his eldest son William succeeded; his son John and his grandson William followed in the occupation of the seat. William Selby resided at The Mote, and died possessed of it in 1773, leaving it to his wife, who resided there. She died in 1788, and, being without living issue, the estate devolved to John Brown, Esq., a connection by marriage, who thereupon assumed the name of Selby. It remained in various branches of the Selby family until 1889, when it was purchased by the present owner, Thomas Colyer Fergusson, Esq., M.A. This gentleman has devoted much time and care to research in verifying the history of The Mote, and has expended large sums of money in restoring and preserving the edifice.

Entering by the main gateway, it will be noticed that the archway is faced with a Perpendicular obtusely-pointed arch carried upon moulded corbels. This and the windows above on both sides of the tower appear to be fifteenth-century work, and are possibly restorations or alterations carried out by Sir Richard Clement. The tower itself was built about 1486 by Edward Haut, who was well favoured by Henry VII. in recognition of his father's heavy sacrifices in the cause of the House of Lancaster. It is said that the King and his Queen were entertained by him at The Mote upon more than one occasion.

The small turret at the top of the tower has been added by the present owner, in conformity to what was probably the original design.

The remainder of the west front calls for no special comment. The windows are all small square-headed two lights, with semi-arched heads, and are glazed with small diamond panes.

The lower part seems to have been built or restored at the same time as the tower, and the upper floor was probably added or rebuilt by Sir William Selby about 1592. It is

possible, however, that the room at the north end of the upper floor was in existence at an earlier date.

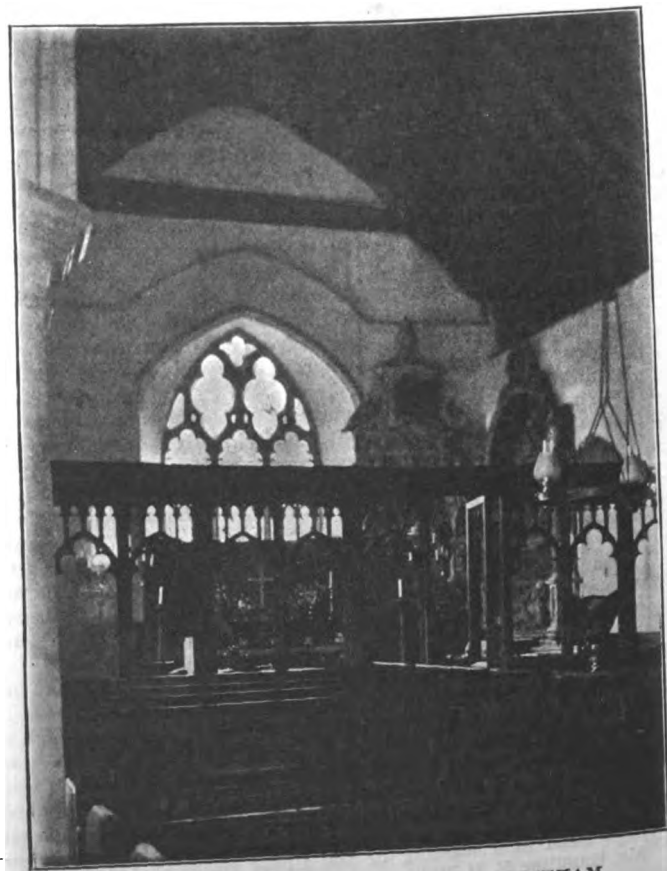
The north end of the wall facing the quadrangle displays two very narrow, almost lancet, windows, with plain hollow mouldings and pointed heads, and a pointed doorway with chamfered jambs and arch, and it is possible that this portion belongs to and is the only remaining part of, the original manor house.

The chief rooms on this side are, on the ground floor, the morning room, long and low, with deeply recessed windows and a fine oak chimney-piece, put in by Major Luard Selby in 1856. Adjoining this is a space, about 15 ft. by 5 ft., supposed to have been a dungeon, entry to which was gained from the first floor of the tower. On the north of the archway is another long low apartment with walls panelled in oak, which, however, is quite modern, having been fitted as recently as 1890.

Over this is the old drawing-room, a magnificent apartment, measuring 40 ft. by 17 ft., the chief feature of which is the remarkably fine carved oak Jacobean chimney-piece put in by Sir William Selby somewhere about 1625. This is an extremely fine piece of work, but the upper portion is somewhat spoiled by being painted and gilded to match the walls, which are hung with old and rare hand-painted Chinese paper, said to be the first specimen of wall-paper used in this country. This is surmounted by a carved and gilded oak frieze bearing the Selby crest at intervals.

The short passage leading to the room is oak-panelled from floor to ceiling. A door leads from this drawing-room to the chapel staircase and chapel, which has been recently reconstructed, but without very materially altering its character and with but slight alteration of the old woodwork. This is a remarkable chamber, measuring 35 ft. by 16 ft. It has a painted waggon-wheel ceiling, the ribs and interstices being covered with the arms and emblems of Royalty. The side next the quadrangle is carried on oak supports, and an oak arcade encloses a small conservatory. The north-east corner of the house is apparently of about the same date as the chapel, from which it is separated by a priest's room and vestry.

The crypt or cellar has a vaulted ceiling of the usual thirteenth or fourteenth century type. It is a small chamber 19 ft. by 12 ft., and is about 8 ft. high at the intersection of the ribs. It is constructed of Kentish rag and chalk, and is lighted by a two-light window corresponding to the work of that period. It carries a room which was the chapel of that date, in the west wall of which is a Decorated squint, and in which there is also



INTERIOR OF ST. PETER'S CHURCH, IGHTHAM.

a doorway similar in style and moulding to the east doorway of the hall below; it communicates with a series of rooms which have been considerably altered.

Adjoining this chapel are two rooms of which the gable ends facing the quadrangle exhibit some fine examples of sixteenth century openwork barge-boards.

Contiguous to these rooms, but detached from the outside wall, is the hall, built about 1340 or 1345 by Sir Thomas Cawne. This apartment is 30 ft. by 20 ft., and nearly 35 ft. high. The roof is carried partly by a stone arch and partly by curved timber principals at each end. These arches are similarly moulded and are supported, each in their own material, by corbels representing grotesque human figures. The walls are oak panelled, but this is modern, having been carried out by Mr. Norman Shaw in 1872. The fireplace is fifteenth century, as is also the five-light window. A very beautiful two-light transomed Decorated window on the east side was only discovered and reopened when the oak panelling was being put up.

The lower floor of the south front is in the same style as the west front excepting the kitchen, which corresponds to the crypt, but the whole of the upper floor overhangs and is of a later date, probably Elizabethan.

The library is on this side. It is a long low room, the special feature of which is the handsome carved oak chimney-piece, put in by the late Major Luard Selby.

The remaining portions of the house call for no special description, though every particle is of extreme interest.

which access might be obtained to the upper rooms. The gables of the west front are finished with sixteenth-century openwork barge-boards, of which, however, only those of the northern one are original, the others being modern restorations.

The present owner, A. E. Coombe, Esq., while adapting the building to present-day requirements, has been most careful to retain its old-world charm.

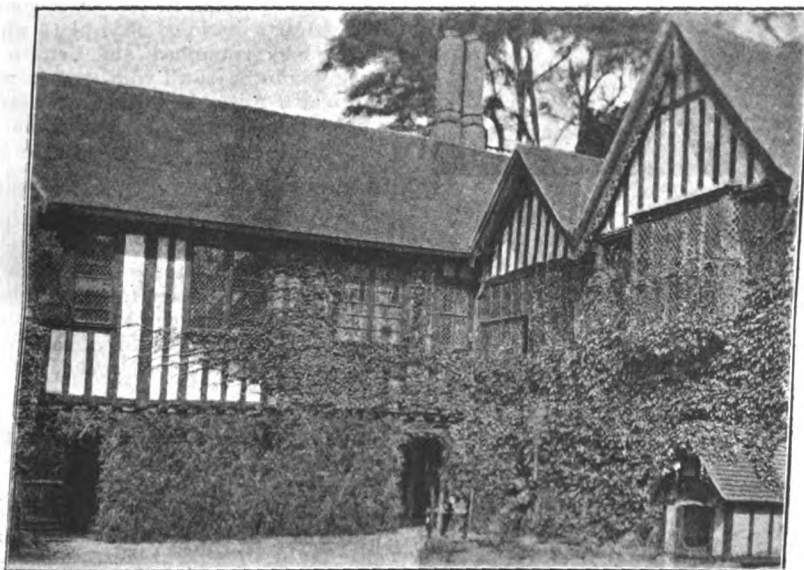
Ightham Church.

Ightham Church, which is dedicated to St. Peter, is typical of the period. The main portion is fifteenth century, but the chancel is certainly very much older, most probably early twelfth century. It has a square embattled tower containing six bells, the tenor one of which weighs 9 cwt.

It is mentioned in Domesday Book in 1080, and was formerly charged ninepence Chrim rent by the Mother Church of the Diocese of Rochester. In the reign of Edward I. its value was given as 20 marks. Hasted says that the patronage of the benefice was always an appendage of the Manor of Ightham, but in recent years the advowson has been the property of the rector.

In the porch is a list of patrons and rectors dating back to the year 1232, which gives some interesting particulars of a rector who was expelled at the time of the Commonwealth.

There are also particulars of several benefactions, one of which, granted in 1546 by one Henry Peyrse, is rather



IGHTHAM MOTE.—NORTH-EAST CORNER OF QUADRANGLE.

Opposite the west front is a picturesque range of sixteenth century cottages, which are said to have formed part of an outer quadrangle, chiefly of stable buildings, that in their day were of sufficient size to accommodate 300 horses with the necessary attendants.

Taken in its entirety Ightham Mote is a charming place, a veritable gem, unique in itself and in its setting, and for a house of this style possibly unexcelled in this or any other country.

The Town House, Ightham.

The Town House is situated at the extreme north end of the village, the grounds adjoining the church.

It is a well-preserved example of a fifteenth-century dwelling-house, and, although still of considerable size, is thought by some authorities to be a part only of what was at one time a much more imposing building.

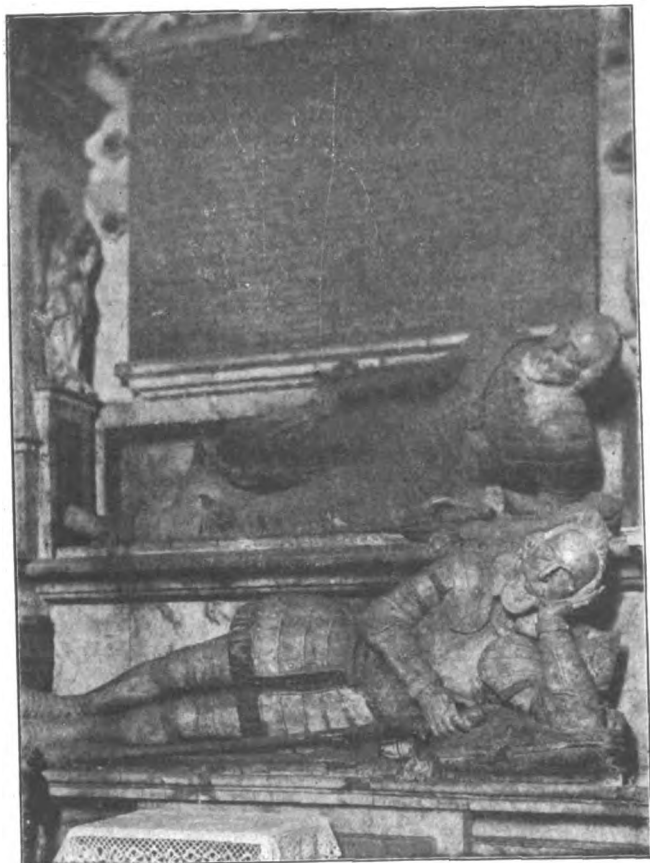
The main entrance is directly off the roadway, under a porch with a descent of one or two steps into the hall. This is a fairly spacious apartment, and has a good timbered roof and fifteenth-century fireplace.

In the north-west corner is an arched doorway leading to what is now the drawing-room, similar in character to the hall. It has a very fine window with trefoil oak mouldings inside and out, and a good fireplace, the proportion of which, however, is somewhat spoiled in consequence of the floor level having been lowered. There is also another window upon the west side displaying some interesting stained glass, which is modern. A rather curious break (now filled in) occurs in the timbering of the ceiling, a large square space having been left, possibly for a trap-door through

quaint. That gentleman, by his will, made gift of 6s. 8d., together with 2s. for the churchwardens, to be distributed to the poor, more especially those on their way to Canterbury, at the rate of 2d. per person, on the Friday preceding Mid-Lent Sunday in each year. This sum was to be charged against the rent of his mansion in Ightham Street (now the George and Dragon Hotel). This gift is still disbursed upon the day named by the churchwardens standing outside the hotel, but pilgrims now being somewhat rare aves, the monies are mainly collected by the village children and expended not on food, but sweets.

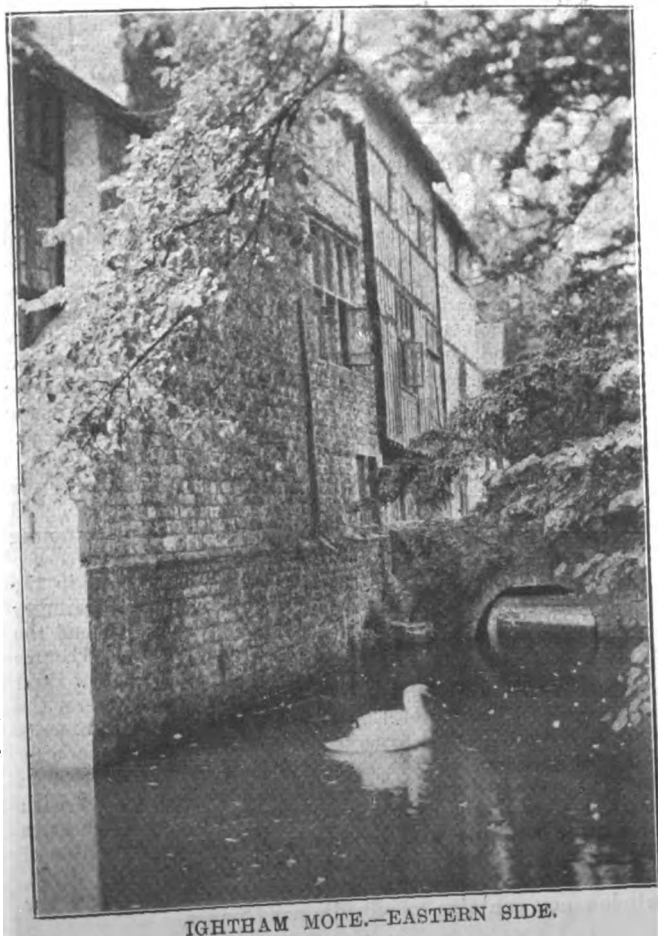
In 1552 the sum of 18s. 9d. was expended upon a new door and 20d. on the lock thereto, both of which are still in use. At the same date 2s. was spent upon whitening and cleaning the edifice.

In the nave and north aisle are several brasses to the Multon and Lambard families. There is also a window to the memory of the family of James Evelyn, but the principal monumental treasures are the tombs of Sir Thomas Cawne or Couen, Sir William Selby and his nephew, and the wife of the latter. That of Sir Thomas Cawne, on the north side of the chancel, is of Caen stone, and represents that nobleman in full armour; above is a window made by his request, and for the cost of which he left 20 lira in his will. At one time this is said to have been glazed with stained glass, and in the top part were displayed the arms of Cawne and his wife Lora, née Morant (a daughter of Sir Thomas Morant of Morant Court, Chevening). This, for some unexplained reason, has been removed, and the window now contains merely diamond panes.



TOMBS OF SIR WILLIAM SELBY AND NEPHEW,
IGHTHAM CHURCH.

On the south side are monuments to the Selby family, two fine effigies of Sir William Selby and his nephew, both residents at The Mote. The top figure is embellished in colours and gold. The lower one represents the husband of the famous Dame Dorothy, whose tomb and memorial is immediately adjoining, on the right-hand side of the altar.



IGHTHAM MOTE.—EASTERN SIDE.

This monument shows the half-length portrait figure of the worthy lady in an oval frame-like recess. Behind the sculpture, moulded in relief, is depicted the life of Adam and Eve in Paradise and their expulsion therefrom. Beneath this is a representation of the Pope in solemn conclave with his cardinals, apparently giving directions to Guy Fawkes. There is also shown two ships, supposed to be sailing to England, and the Houses of Parliament in London with the vaulted cellars stacked with faggots and barrels.

This pictorial sculpture evidently alludes to the tradition which says that it was Dame Dorothy Selby who either wrote or interpreted the mysterious letter received by Lord Monteagle, giving him warning of the terrible Gunpowder Plot. How this story became woven round Dame Dorothy is somewhat difficult to account for, it being almost universally accepted by historians that it was the nervous and shifty Sir Francis Tresham, of Rushton Hall, Northamptonshire, who was the informer. However, it is clear that at the time of her death in 1641 general belief was that the Dame had some hand in disclosing the conspiracy.

Immediately beneath the bust is the following inscription:—

D. D. D.

To the precious name and honour of Dame Dorothy Selby.

She was a Dorcas

Whose curious needle turned the abused stage

Of this lewd world into the golden age,

Whose pen of steele, and silken inke enrolled

The acts of Jonah in records of gold:

Whose arts disclosed that plot, which had it taken

Rome had triumphed, and Britain's walls had shaken.

She was in heart a Lydia, and in tongue a Hannah,

In zeal a Ruth, in wedlock a Susannah,

Prudently simple, providently wary,

To the World a Martha and to Heaven a Mary.

Who put on immortality in the year } of her pilgrimage 69,
of her Redeemer 1641.

The church seems at various times to have undergone very extensive alterations, notably in 1550 and 1552, and again in 1639. It was considerably restored in 1850, and again in 1881, when the two galleries at the western end were removed, being considered unsafe, and only quite recently the fine timbered roof has been unceiled and now shows the original oak beams, some of which are beautifully carved and moulded.

In bringing this paper to a close I desire to express my thanks to Mr. Frank Spiers, Mr. T. Pitt and Mr. Alfred Burch for their kind assistance, and to acknowledge my indebtedness to *The Builder* for particulars gleaned therefrom, and also to the archæological and historical writers referring to the places herein briefly surveyed.

THE HYGIENIC ASPECTS OF GAS FOR HEATING AND LIGHTING.*

FROM the earliest days in which it was realised that there was an atmosphere around us, it has proved itself not only a happy hunting-ground for the investigator, but also a battlefield for the scientists of all periods. Three hundred and sixty years before the birth of Christ, Aristotle, noticing the work which air in motion would do, came to the conclusion that it must have weight, and attempted to ascertain if this were so by weighing an ox-bladder from which all air had been expelled, blowing it full of air, and again weighing it, when his scales showed a slight increase. No sooner, however, had his experiment been made public than Simplicius at once pointed out that Aristotle had used the air from his lungs, and that if ordinary air was pumped in from a bellows no increase in weight took place. The controversy was the first and the last for twenty centuries, and it was not until Galileo, in the middle of the seventeenth century, made his celebrated experiment of compressing air into a glass globe that the weight of the atmosphere was established.

CONSTITUENTS OF AIR.

Many other physical discoveries with regard to the air were made in the following century; but it was not until 1774 that the combined labours of that trinity of genius, Priestley, Cavendish and Lavoisier, showed that air was not an element, as had always been supposed, but was, in fact, a mixture of the two great elementary gases, oxygen and

* A Paper by Professor Vivian B. Lewes, F.O.S., F.I.C., read on October 8 at Manchester before the British Commercial Gas Association.

nitrogen. It was at this period that Cavendish, devising processes for the purpose, first determined its composition, and found it apparently so unalterable that he came to the conclusion that it must be a compound; while others inclined to the belief that it was merely a mixture. It was then that the brilliant experiments of Lavoisier, on the influence of oxygen upon combustion, led to the idea that it was the percentage of oxygen present that was really the criterion of a good or bad air, while Priestley showed that growing vegetation under the influence of the sun's rays gave off oxygen. Later it was discovered that gases did not behave towards gravity in the same way as other bodies, and could not be arranged in layers, but that when a light gas was superimposed upon a heavy one the two quickly mingled. Graham, that great Master of the Mint, in the middle of the last century, having experimentally determined the rate at which intermingling of the gases took place, enunciated his celebrated Law of Diffusion.

The presence of carbon dioxide in the air had been ascertained at much the same time as the discovery of its composition, and, further, it had been shown that the carbon dioxide given off during respiration, and by all processes of combustion in which carbonaceous material was used, was absorbed by plant life, the carbon being used to form the woody fibres and cells of the growing plant, while the oxygen escaped free to revivify the air. As soon as this had been accepted, carbon dioxide was substituted for oxygen as the factor which influenced the health-giving properties or otherwise of the air.

THE CARBON DIOXIDE BOGEY.

At a somewhat later period, however, doubts began to be raised as to the injurious effect of carbon dioxide, and the statements of Sequard and D'Arsonval pointed to the fact that it was rather the organic matter which always accompanied the carbon dioxide when evolved by processes of life that really was the injurious factor in an unventilated space, and chemical purity began to occupy the important place in the mind of the ventilating engineer. It was found, however, that the organic matter in the air was extremely difficult to estimate, and, as it was always accompanied by carbon dioxide, the quantity of which could be determined readily and easily, the amount of carbon dioxide in the air was taken as the measure of its purity, not because it was itself injurious, but because, when generated by respiration or evolved through the skin, deleterious organic matter accompanied it. Pettenkofer and other observers, having made analyses of air from all parts of the world and under all conditions, found that it was always present, and existed to the extent of 0.03 to 0.04 per cent. in good air, and the sanitary authorities from these facts fixed as the limit in the air of confined spaces 0.06 per cent. of carbon dioxide as being the amount to which it can be raised without injuring health when the carbon dioxide had been produced from life.

This last saving clause, however, was nearly always overlooked, and carbon dioxide has for the past thirty years been regarded as a more or less dangerous impurity by those who did not grasp the fact that it was merely the surehead for the organic matter that accompanied it under special conditions. A large number of observers traversed the organic matter theory, and came to the conclusion that the exhalations of a healthy subject contained no poisonous matter, while at the end of the last century Kruger advanced the theory that the effect on health produced by want of ventilation was due to heat and moisture. Flügge, in 1905, came to the conclusion that temperature was the only factor that had any hygienic effect, and the health would be maintained, no matter how bad the ventilation, if the temperature of a room in which people were working did not rise above 65° Fahr., or for an ordinary living-room above 70° Fahr.

HEALTHY CONDITIONS OF INDOOR ATMOSPHERE.

Great as were these changes in opinion as to what really constituted healthy conditions of indoor atmosphere, but little attention was paid to them in England until Dr. Haldane confirmed the fact that the organic matters thrown off from the lungs and the skin of healthy people are not deleterious to health, although, consisting as they do of germs and bacteria which easily undergo decomposition, they quickly give air a sour and unpleasant smell. Dr. Haldane and Dr. Leonard Hill have also demonstrated that the carbon dioxide, even when present in such enormously increased quantities as 3 to 4 per cent., has no effect except

to deepen the breathing, while with 6 per cent. it begins to produce headaches, palpitations, sweating and distress, and with 11 to 12 per cent. coma sets in, but does not quickly destroy life. They have also demonstrated that the oxygen in the air may be reduced to 17.5 per cent. without interfering with the ordinary functions of life, and that, in point of fact, the discomfort and oppression caused in badly-ventilated rooms have nothing to do with the chemical composition of the air. So that to-day our views on ventilation are in a condition of active change, and we are coming to the conclusion that the percentages of oxygen and carbon dioxide within the limits of the quantity found in the worst ventilated rooms are immaterial, and health is dependent upon temperature, moisture, and movement of air, the latter being one of the most important factors.

The old phase of thought and knowledge with regard to our views on ventilation, which future generations may justly call the "chemical quality era," is fast passing away, and the idea that the percentage of carbon dioxide may be taken as the criterion of the effect of the air of a room on health would soon be as dead as the percentage of oxygen standard if it were not for the fact that accepted theories die hard, and that it is to the interest of some to keep the carbon dioxide skeleton dancing on its stick. The ease, however, with which carbon dioxide can be estimated makes it a valuable indicator, and as long as it is recognised that it is merely an index and not an active factor in destroying health, its presence will be taken advantage of in tracing air movements.

MISTAKEN IDEAS.

There is no phase of the subject of ventilation that has received more attention, has been more dogmatised about, or more misrepresented than the effect of artificial illuminants on the air of confined spaces. When electric lighting first became popular, the two great features that appealed to the public were that it was more convenient to press down a switch than to find a match, turn on the tap, and light the gas, and, secondly, that as it abstracted nothing from the air and added nothing to it, electric light must be more healthful in a confined space.

THE STERILISING QUALITIES OF GAS.

I remember well the first doubt that ever crossed my mind arose when lecturing in a well-known London hall, in which I had given many lectures before when it was lighted by gas sun-burners, and had never felt any oppression. On this occasion, however, the hall had just blossomed out in the full glory of electric light, and I felt it unpleasantly stuffy, while two of the audience felt faint and had to be taken out. In consequence of this, I made some experiments in a room having a capacity of 2,700 cubic feet, and obtained the totally (to me) unexpected result that when the room was lighted by two Welsbach "C" burners and mantles on a pendant, each consuming 4 cubic feet of gas per hour, the air at the breathing level in the room was far purer and fresher than when three 16-candle incandescent electric lamps were used, and that the result became the more markedly in favour of gas the larger the number of people in the room.

Further experiment showed that the cause of this unexpected phenomenon was that the strong uprush of heated products of combustion from the gas-burners drew up the emanations from the skin and lungs of the occupants, charred and sterilised any germs that accompanied them, and, reaching the ceiling at a temperature of 12° higher than when electric light was employed, diffused through the plaster so rapidly as to draw fresh air into the lower portion and create a brisk draught under the door of the room, and, while so diffusing, filtered off the charred remains of germs and organic matter on the white washed ceiling, thus giving the blackened area which always occurs on the ceiling above the gas light in town air, and marks the beneficent work of sterilisation that the gas-flame is carrying on, and not, as the advocate of electric light always insists, imperfect combustion.

PURIFYING PROPERTIES OF WHITEWASH.

Soon after these experiments had been made, Sir George Livesey commenced his celebrated attack upon the sulphur clauses, and, in order to prove his contention that lime purification was not essential for a domestic gas supply, took a small house near the Old Kent Road, in which Dr. Ott. Hehner and Dr. Rideal made a long research upon the influence of the sulphur in the gas upon the air of the rooms

if iron purification only replaced the previous methods. These investigators found that it made no difference to the air of the room whether lime purification had been used or not; but the most startling fact was that, after burning large quantities of the gas in small rooms with the grate, doors and windows closed, they found no more sulphur acids in the air of the room than in the atmosphere outside the house, and often less. The explanation of these facts was that the plaster and whitewash of the ceiling and walls consisted largely of calcium carbonate, and that, as the heated products of combustion escaped through them by diffusion, the sulphur acids became fixed as sulphates and sulphites of calcium, while the portion that got cooled below the temperature necessary for rapid diffusion was to a certain extent absorbed by contact with the whitewashed ceiling. As the rooms were made as air-tight as possible, the exterior air that entered to take the place of the heated products had to pass in through the plaster, and so underwent a purification that led to the sulphur in the room being sometimes less than in the open air. A convincing proof that this was the true explanation was found by varnishing the ceiling and walls, when the sulphur acids in the air increased pro rata with the amount of sulphur in the gas.

GAS AND AIR MOTION.

Following up the subject, Dr. S. Rideal made an exhaustive research upon the "Relative Hygienic Value of Gas and Electric Lighting," which was published in the "Journal of the Royal Sanitary Institute" in 1908, and from which he came to the conclusion that "owing to the better ventilation obtained by gas, the products of combustion are not found in the air in anything like the proportion which might be expected—the temperature and humidity in an occupied room being no greater than when the room is lit with electric light." Since these facts were first published, many experiments of this character have been made, both in this country and abroad; but as far as I know not one iota of rebutting evidence has been forthcoming—all the results showing beyond doubt the importance of the heat given by the combustion of the gas in setting air in motion, promoting diffusion, and, over a given period, drawing in fresh air in so much larger a ratio than it gives off polluting products that the air in the breathing zone of a closed room is purer than with electric light, which gives off no products, but has a smaller influence in creating motion of the air.

Dr. Leonard Hill, who has devoted his life to a study of the hygienics of the body, in this year's Presidential address to the Physiological Section of the British Association, defined the conditions essential to any good system of ventilation as being: (1) Movement, coolness, and proper degree of relative moisture in the air. (2) Reduction of the mass influence of pathogenic bacteria. A stagnant atmosphere is perhaps the worst enemy to health. The body is as dependent upon the action of the skin as upon the lungs for throwing off the waste products of life, and in an hour evaporation gets rid of some 700 grains of moisture from the skin and lungs. If the air is stagnant and still, the moisture-laden emanations from the body are entangled by the clothes, and a humid layer of foul air hinders further evaporation, throwing such a strain on the system that a feeling of malaise rapidly arises, while if the air around the body is in motion and sufficiently removed from its saturation point for moisture, this blanketing of the body does not occur, and evaporation continues its beneficent work of throwing off waste products and regulating the body temperature.

Here, then, are two of the most important factors in ventilation—movement of the air to prevent stagnation, and keeping the air sufficiently removed from its saturation point to allow proper action of the skin. As regards air movement, this may be brought about either by the natural method of air currents resulting from difference in weight of volumes of air, or by artificial methods, such as fans or blowers. The grandest illustration of the former is the creation of the trade winds by the uprush of heated and water-saturated air at the tropics, drawing in the cool and heavier air from north and south of those regions, while the overhead currents in an opposite direction that go to restore the balance of aerial pressure feed the rainfall of the northern and southern hemispheres.

If we heat air it expands, becomes lighter than the unheated air, and ascends; while cooler air takes its place, and a current or air movement is produced. Saturate air with water vapour, and as the latter is far lighter than the former, the tendency is again to ascend.

(To be continued.)

ILLUSTRATIONS.

RAVENSHOE, FURZE HILL, SURREY.

THE house stands high on a gently sloping site. Above a plinth of Crowborough bricks, the walls are finished with cement rough-cast uncoloured. The roofs are of dark red hand-made tiles, and the doorway, &c., of Ancaster stone. The drawing, which was in the R.A. Exhibition this year, shows the entrance front, the aspect being north-west. The house has been excellently built by Messrs. J. W. Falkner & Sons, and the architect is Mr. H. P. Burke Downing, F.R.I.B.A., of Westminster.

DESIGN FOR HOUSE, BELVEDERE AVENUE, WIMBLEDON.

THIS house was designed for a site standing 5 or 6 feet above the level of the roadway, and was to be built with 2 inch red brick plinth, cement stuccoed front, with green painted louver shutters, the roof covered with dark Wrotham tiles, the front bay and porch to have swags and ornamentation modelled direct on the spot, the columns being in Portland stone. The estimated cost of this house was about £1,400. The original design, however, was abandoned, and a still larger house has been put up in its stead.

HOUSE AT SLOUGH.

THIS house has been built on a plot of land with 18 feet frontage. Advantage has been taken of widening of the site to develop the plan on broader lines than the small suburban villa, with its narrow passage and straight flight of stairs. The accommodation consists of hall, drawing and dining rooms, kitchen, scullery, and usual offices, three bedrooms on the first floor, bathroom with hot linen cupboard, and w.c., while a fourth room was added while the building was in progress. The lower portion of the exterior is treated in red and purple bricks, with a wide flush mortar joint, while the upper storey is stock brick covered with cement rough-cast.

The oak half-timber is of genuine construction, pinned together with oak pins, with an infilling of brick. Wood casements are used throughout, and all mouldings and details are of the simplest character, while the ground floor throughout is laid with wood blocks.

The contract price was £454, including £15 for contingencies. The room in the roof was put in at an extra cost of £25.

The builder was Mr. H. D. Bowyer, of Slough, and Messrs. Moscrop-Young & Glanfield, Licentiate and A.R.I.B.A., were the architects.

DESIGN FOR COMPLETION OF REGENT STREET QUADRANT.

MR. ERNEST RUNTZ, in forwarding us his design for the completion of Regent Street Quadrant, which we illustrate to-day, sends us an apologia of his views and the influence they have had upon his design.

Mr. Runtz holds that it is impossible to get away from the fact that commercially there must in the treatment of shop premises be as much open space as possible for display of goods on the ground floor, and he refers to the treatment which he adopted at the Norwich Union building, at the corner of St. James's Street, in Piccadilly, where there is a 40-feet span girder, supported at each end on stanchions cloaked by two massive pavilions, which he considers is better than a series of thin props at short intervals, which only offend the eye.

Concerning the masking of steel construction, Mr. Runtz says that everybody knows that steel construction is there, and there is no reason why one should not cloak it over, any more than that a man should not wear a collar and tie to finish off his person; you know the neck is there if you do hide it.

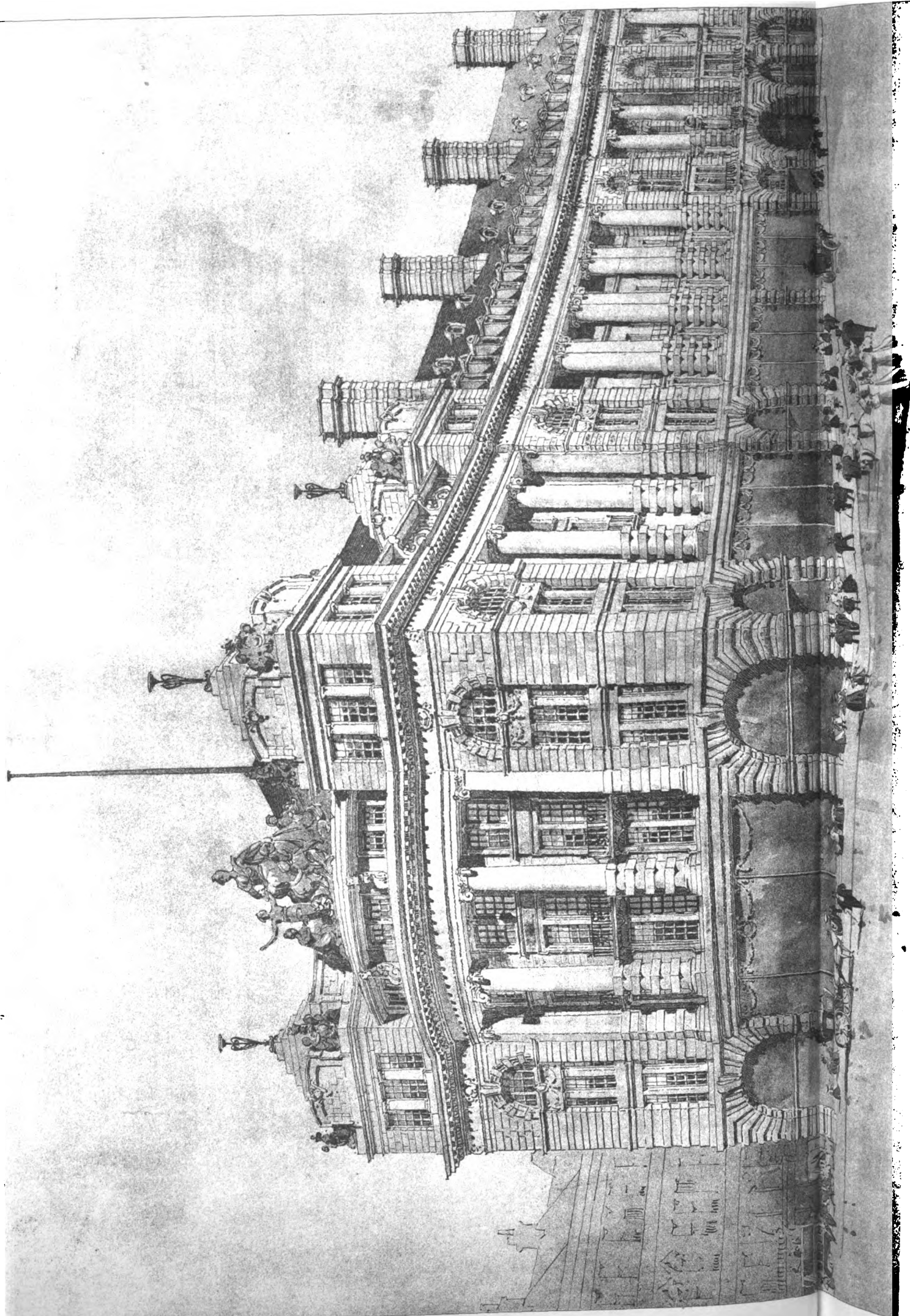
He goes on to say: "One cannot conceive that the Greeks and Romans, had they known of the advantages of steel construction, would not have made use of it for commercial and structural purposes, neither would they, in my opinion, have hesitated to cloak the steel with a more pleasing material, in the same way as they painted the beautiful marble columns and slabs used in their buildings, the natural surfaces of which we so religiously preserve in the present century." We may add that the Romans, at any rate, did bury iron girders in concrete and cover the latter with marble slabs.

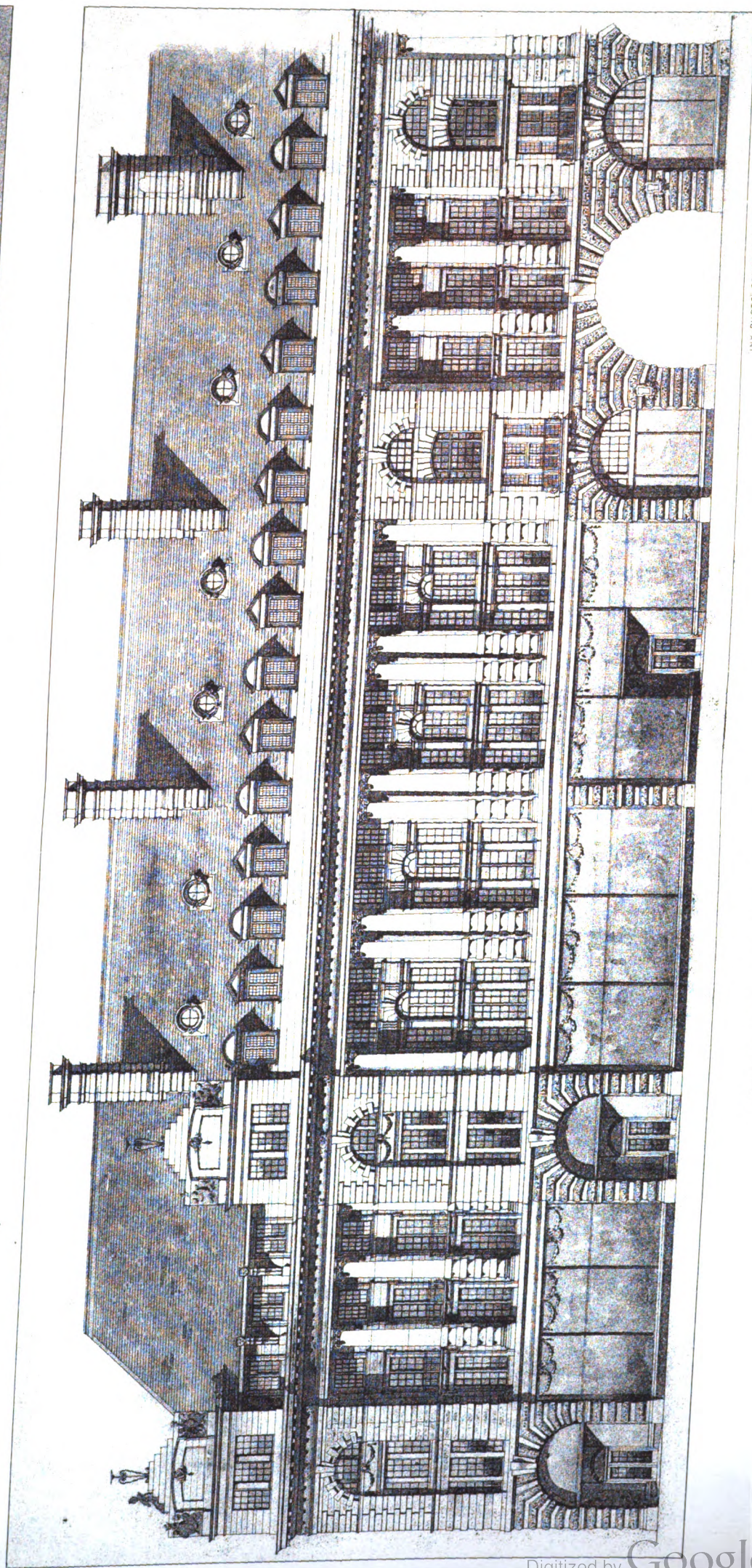
In the treatment of his design for Regent Street Quadrant, Mr. Runtz points out that he has set back a mezzanine floor as a sort of gallery, and in his elevation has not departed seriously from the main features of Mr. Norman Shaw's design on the upper floors, but has merely enlarged the window openings, which are set back, and, therefore, have no real effect on the perspective or vista.

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DESIGN FOR THE COMPLETION OF REGENT STREET QUADRANT.
By MR ERNEST RUNTZ, F.R.I.B.A.



"INK-PHOTO" S. RAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

HOUSE ON THE BELVEDERE ESTATE WIMBLEDON.

Messrs. J. BELL GRIPPER and E. GABRIEL STEVENSON, Architects.

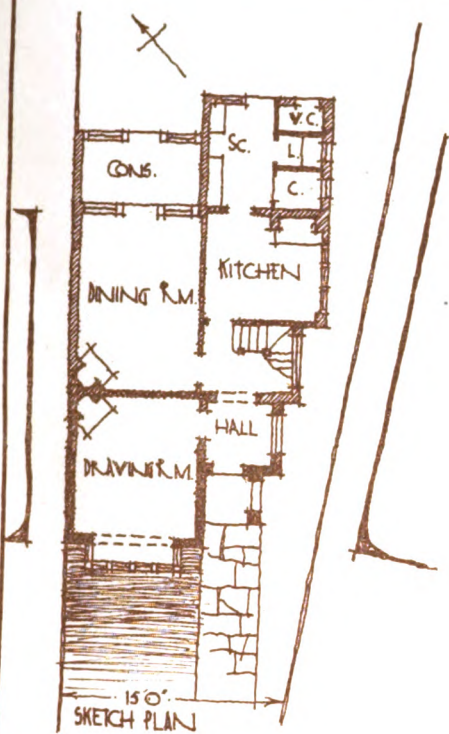
HOUSE AT SLOUGH

for F. G. SMITH ESQ

Mossington & Glatfield

ARCHITECTS

20 BROOK ST. W.





(Royal Academy Exhibition, 1912.)

Christ 11th 1912



"INK-PHOTO" SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—III.

HOUSE OF HANOVER—THE GEORGIAN ERA.

(Continued from page 186.)

DURING the opening years of the eighteenth century architecture developed certain common characteristics chiefly based on Palladian principles, combined with features of English origin inherited from the earlier work of Wren. Although Wren did not complete St. Paul's Cathedral until 1710, and was engaged at Hampton Court Palace up to the time of his death there in 1723, we do not find that he was entirely responsible for this new movement. The credit is largely due to Richard Boyle, Earl of Burlington, who may

John Vanbrugh, William Wakefield, William Kent, James Gibbs, Colin Campbell, Isaac Ware, Thomas Ripley, Henry Flitcroft, and Thomas Archer, a pupil of Vanbrugh's. The provinces record important additions in the names of William Smith, of Warwick; John Wood, of Bath; John James, of Eversley (died 1746), and Sir James Burrough, of Cambridge. In Scotland William Adam, the father of the Brothers Adam, had an active practice. He died in 1748, and was the author of "Vitruvius Scoticus," while the descendants of the Mylne family practised in the neighbourhood of Edinburgh.

The first building of importance, Blenheim Palace, Woodstock, Oxfordshire, built for John, Duke of Marlborough, was the principal work of Sir John Vanbrugh, in which he received the assistance of Nicholas Hawksmoor, and probably also of his pupil, John Archer, who at that



DRAWING-ROOM FIREPLACE, LINDSEY HOUSE, CHELSEA.

be said to have created a school and directed the general taste in Classic principles. He was extolled by Gay and Pope for the erection of Burlington House, Piccadilly, where he entertained very largely. Giacomo Leoni was brought by him from Venice to assist in the translation of Palladio's "Architecture," which appeared shortly after the accession of George I. in 1714. A further edition appeared in 1733, dedicated to Lord Burlington, and published by the engraver, Benjamin Cole. On the first page of the letterpress is an engraving of an altarpiece designed by Inigo Jones for the chapel at Old Somerset House. "The Architecture of Leon Battista Alberti" was first published in 1726, being a translation of Alberti's "De re Aedificatoria," by C. Bartoli, with plates by G. Leoni, who also published in 1741 a work on painting and statuary in English and Italian.

The principal architects practising in the first half of the century include, besides those already mentioned, Sir

time, 1705, was engaged on a work of his own—namely, Heythorpe Hall, in the same county.

The many criticisms levelled at the shade of Vanbrugh for this ponderous essay, which commemorates the first Duke's French victories, are merited chiefly by reason of the supposed want of *raison d'être* for much of the monumental nature of the exterior. The building was to be a national monument to house the hero of the Battle of Blenheim, and was to form a permanent expression of England's joy at the suppression of the power of Louis XIV. When Lille, Malplaquet, and Bouchain had been fought and won—the final success being achieved—the Duke returned to his well-earned rest, spending the remaining four years of his life at Woodstock, where he died in 1716. Sarah, his Duchess, lost no time in superseding the architect, Vanbrugh, who from this time ceased to visit the works, although some of his designs appear to have been carried out. Ex-

cepting, however, where the decorations are structural, they are mostly of later date. The three principal State rooms are, curiously enough, in the Régence style, as practised by Verberckt and Rousseau in the Cabinet du Conseil at Versailles. The tapestries and paintings here represent many of the battle scenes in which Marlborough, Cadogan and Armstrong figure prominently.

Laguerre was responsible for the painting of the saloon, and the ceiling of the hall is by Thornhill, while Kneller and Duran are represented by portraits of the Duke and Duchess, which respectively occupy positions over the mantels of the third and first State rooms, the second State room being known as the "Bouchain" room.

Charles Spencer, the second Duke of Marlborough, housed his valuable library in the Long Gallery in 1749, the room receiving subsequent decorations, probably from the designs of Sir William Chambers during the residence of George, the third Duke. The monument in the chapel is from the chisel of Rysbrack.

Stowe House, Buckinghamshire, was built for Richard Temple, Lord Cobham, by Sir John Vanbrugh in 1714. It is a finer work than Blenheim Palace, but has within a certain redundancy which is not a little overpowering, particularly as regards the dining-room, where, however, some fine tapestries and two good chimney-pieces are redeeming features. The designs of these latter, though attributed to Grinling Gibbons, are more of the character and style of William Kent. Kent was employed with Bridgman on the gardens, where also "Capability" Brown first learnt to use the hoe, and eventually rose to be Lord Cobham's head-gardener. Kent was responsible for the ceiling in the vestibule. The hall, which is treated constructionally, contains a carved processional frieze from the chisel of Valdré. The music-room appears to have received the attention of Robert Adam in the English Empire style so much in vogue towards the latter years of the century. In the chapel are carvings by Grinling Gibbons and Michael Clarke, with some cedar panelling brought from Sir Richard Grenville's residence, Kilhampton, Cornwall. The library, which contains some valuable MSS., was decorated by Sir John Soane in 1805.

Oulton Hall, Cheshire, is a quiet brick and stone structure attributed by Murray to Vanbrugh. There is none of the colossal grandeur of Blenheim, nor yet the dignity of Stowe, in the general treatment of the façades, which rather savour of the reputed Wren manner. The entrance hall is vaulted, and the enriched entablature is much broken by reason of subsidiary Corinthian pilasters. The swags and other ornament give just sufficient relief to form a simple decorative scheme. The room is painted white throughout, except for the polished hardwood doors. The dining-room is panelled to the ceiling, with a fluted Ionic order supporting an entablature with pulvinated frieze. The niche between two of these pilasters contains at the head a large carved shell, which is typical of the prevailing style. The door architrave is of the swelled ogee type usual in the later work of Wren, only without plinth blocks; the mouldings to the stiles of the doors are worked out of the solid, unlike the panels to the walls, which have bolection mouldings, the panels themselves in both instances being fielded.

Some of the smaller reception-rooms are treated in a very simple manner, with less elaboration than obtains in the saloons. The house was rebuilt by John Egerton in the early years of the century upon a more elevated site than that occupied by his ancestors, whose ownership dates back many generations. Some alterations were effected by Lewis Wyatt in the reign of George IV.

Duncombe Park, Yorkshire (the "Helmsley" of Pope), had been the seat of George Villiers, Duke of Buckingham, prior to its purchase in 1695 by Sir Charles Duncombe, who became Lord Mayor in 1708. Duncombe owned Downton, in Wiltshire, and a house at Teddington in addition, which were both decorated at much expense, the latter being favoured with the brush of Verrio prior to his death in 1707, and also with the chisel of Grinling Gibbons. Although Duncombe died in 1711, the building was not completed until 1718, from the designs of William Wakefield. A fire in 1879 unfortunately did much damage, necessitating subsequent redecoration. The stone-cased hall is a small but noble apartment, with lofty fluted Corinthian columns of bold projection attached to the walls, supporting an entablature with carved frieze of oak leaf and acorn ornament. The saloon is somewhat gaudily finished, but withal a handsome apartment, its gilt splendour being doubtless due to the above-mentioned restoration.

(To be continued.)

THE DOMESTIC ARCHITECTURE OF EGYPT DURING THE FIRST DYNASTY (B.C. 5500).

By CLAIRE GAUDET.

THIS year the greatest interest is attached to the discoveries made by Professor Flinders Petrie in the large cemetery of Tarkhan, thirty-five miles south of Cairo, where burials dating from before the First Dynasty, or Dynasty 0, as it is called, to Dynasty IV., have thrown invaluable light upon domestic architecture 7,400 years ago. The work at Memphis, which has yielded most interesting monuments, has, however, been eclipsed by the digging at Tarkhan.

For some time the Professor had come to the conclusion that the recessed panel pattern so frequently seen in early decoration carved in stone was of a timber and domestic origin, since it had no structural significance in brick or masonry, but in timber planks is easily explained. These conclusions had been founded upon the designs on the sarcophagus of Khu-fu-aukh in the Cairo Museum, and on the coffin of Nekht-anekh, the tomb of Methen and others, and now at Tarkhan coffins have been discovered which clearly prove these theories to have been correct.

The sarcophagus of Khu-fu-aukh represents a house, in the centre of which is the door lying back, with the panels overlapping. To judge from the width of the door panel, the main angle planks were the width of a whole tree. On either side of the entrance, again, the same design is followed, the third overlapping plank remaining forward and free, the recessing beginning again and imitating a small false opening. When this pattern is rendered in brick or stone, as seen in the false doors of tombs, &c., the recessing becomes much deeper, owing to the nature of the material. The upper storey of the house, as seen on the sarcophagus, has triangular windows. The roof is supported on poles, which are half trees, and present their circular portion, the arrangement resembling diminutive "stockading." The coffins which were found are made of thick planks of wood; in the planks are holes about two inches long by half an inch wide, recurring at measured intervals. The wood obviously had served an earlier purpose; some show signs of fire on the inside, the outside being weathered. These planks are, therefore, none other than the timbers of the houses or perhaps even timbers taken from the very house of the occupant of the coffin.

In the example which showed a charred surface, doubtless the house had been burnt down and the coffin made of the remaining pieces.

The recurring holes denote where the boards were lashed together with leather thongs, each plank overlapping the other. In Professor Petrie's next book the system of construction is clearly set forth. The lashing together gave ample "play" to the wood to swell or contract, according to the season, and any gaps caused by contraction could be wedged up from behind.

This mode of construction also rendered the houses easy of transport; they could occupy the plains, where it is ten degrees cooler from December to June, and could then be removed to the desert.

The coffin shown in the photograph dates from the Third Dynasty, and is a rude representation of a house with two openings, used decoratively, the number of openings apparently having no definite significance. The usual "roll," or "log," is seen over the lintel. In earliest times this roll was a bundle of reeds covered with mud; its next stage was a wooden log, and, lastly, we see it retained in stone. The roof is curved.

The other objects discovered were wonderfully well preserved. Rolls of linen, soft and white and of a beautiful texture unknown to us to-day, were found in the tombs or entwined round the bones, from which all the flesh had carefully been removed previous to burial. In pre-dynastic times (B.C. 7500 to 5500) bodies were mutilated in order to prevent the soul from returning, lest it should take the food that was needed for the living. But in the Fourth Dynasty the belief changed, and life eternal in the Other World was held to depend upon the preservation of the body in this. Dr. Wallis Budge tells us: "The Egyptian of the Fourth Dynasty (1) wished the souls of the dead to enjoy everlasting life. (2) He wished to maintain a dwelling place for the 'Kau' or 'doubles' of the dead, so that they might not be obliged to wander about in the deserts in search of food. (3) He wished the dead to form a bond of union between the gods and himself. (4) He believed that the soul came back to the body from time to time. (5) He believed in the resurrection of the material body itself, and that at some future time it would be united to its soul for all eternity."

These beliefs in the necessity of the mummification of the

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body (dating from the Fourth Dynasty, 4700 B.C.) obtained right down to Christian times amongst the ordinary folk.

In regard to the *Ka*, or double, we are told that it was that part of the soul of a man which from birth to death was his "abstract individuality" or "personality"; the word is also translated by "double, genius, image, character, person, self." Associated with the *Ka* was the *Ba*, which was believed to be everlasting, and to enjoy eternal existence in Heaven in a state of glory. But for the *Ka* provision had to be made at the death of the man; sometimes a statue was carved in his image, which the *Ka* might inhabit should it be pleased so to do.

This, then, is the origin of the food-offerings, altars, and furniture found in the tombs.

Some pre-dynastic bed-frames in wonderful preservation, with the rush-work webbing still attached, were found at Tarkhan. Sometimes the body was laid upon them, but others were found placed over the body. Some are full-length beds for sleeping, some shorter, and some square for sitting on cross-legged. Five different types of jointing were found in the poles of the beds. The legs are carved to resemble bull's feet, similar to models in ivory found in the Royal tombs of the First Dynasty.

A later development of the provision made for the *Ka*, and one of the utmost importance as again showing the

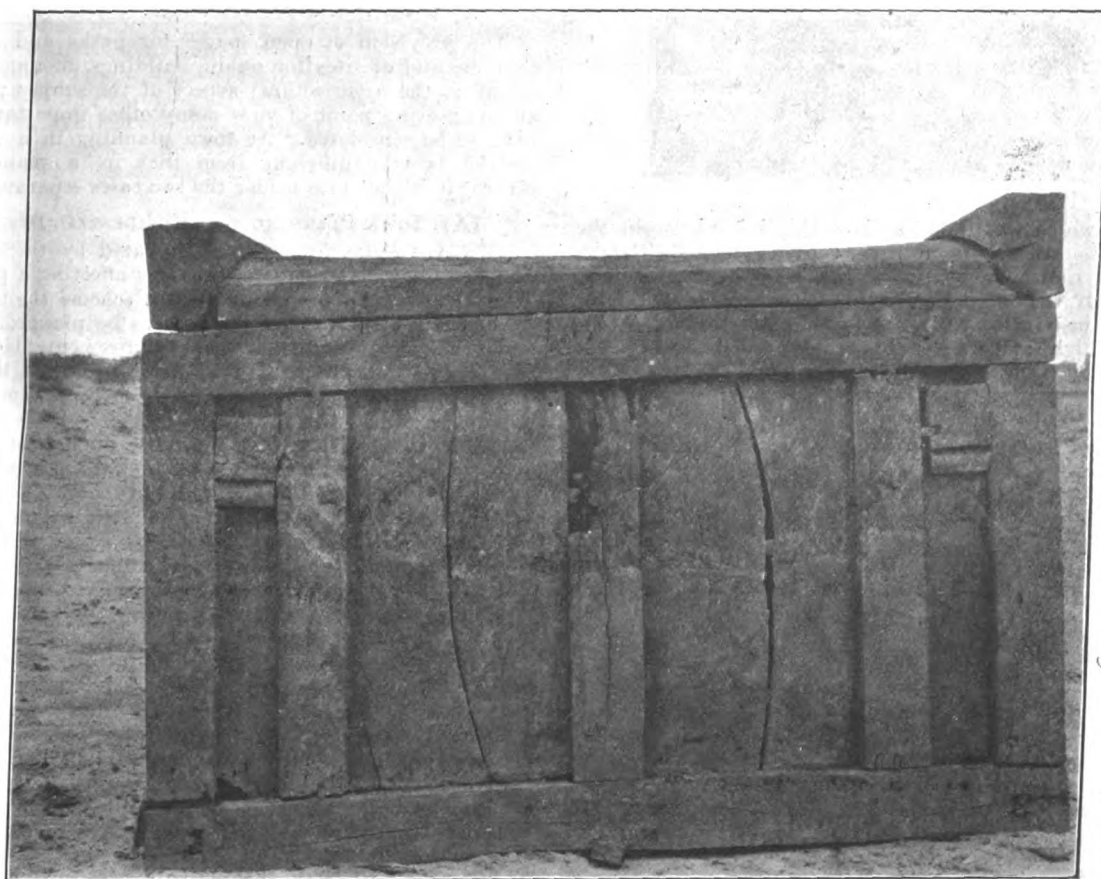
of the little models. The earlier examples have flat roofs, but the later show even to the ribbing of the brickwork arches. In another model the ground floor is roofed with a barrel vault.

One example clearly shows the use of the segmental arch for strength (as used in Roman times) on the ground floor, with the complete semicircular arch on the storey above. The true or radiating arch in brick was used in Egypt as far back as the Third Dynasty, when the curved roof was also represented in stone. In another "soul-house," where a flat roof is seen, the floor of the upper storey rests upon a strong beam, apparently unsupported by any columns below.

The columns in the actual houses of the peasantry, from which these little "soul-houses" are held to be copied, were doubtless of reeds and mud, to judge from the bulging appearance seen in the models; these, then, were survivals of the true prototypes of the Egyptian column, and no doubt continued in use long after they had found expression in stone.

In the forecourt of the house was the square water-tank, with its channel left open. The tank was protected from the rays of the sun by an awning held in position by four posts; all these details are to be seen in the little clay models.

The lower chambers were ventilated from the roof by large



domestic architecture of the period, is seen in the "soul-houses," which were discovered at Rifeh in 1907, of which 150 examples were found. These are little clay models of houses placed on the open ground over the graves. That the cemetery of Rifeh should have yielded so many is due to the fact of its being situated on a growing shoal of gravel, which continued to grow, and in time covered up the little models, which were buried from twenty to twenty-five inches below the present surface. The cemetery is certainly as old as the Eleventh, and may even date back to the Seventh or Tenth Dynasties.

These little models show one or two storeyed houses oblong on plan, with an enclosure in front. They all have a portico with two or four columns, and usually an outside flying stairway leading to the roof and upper chambers.

The walls were of mud and brick, and were colour-washed with red bands, for the colour is still visible in some cases. In later examples the walls are "serrated," or "crested," at the top, and it is curious that the tombs of the modern cemetery close by still retain the custom.

The windows of the lower floor were placed high up and barred for protection, as seen by the cross-bars on some

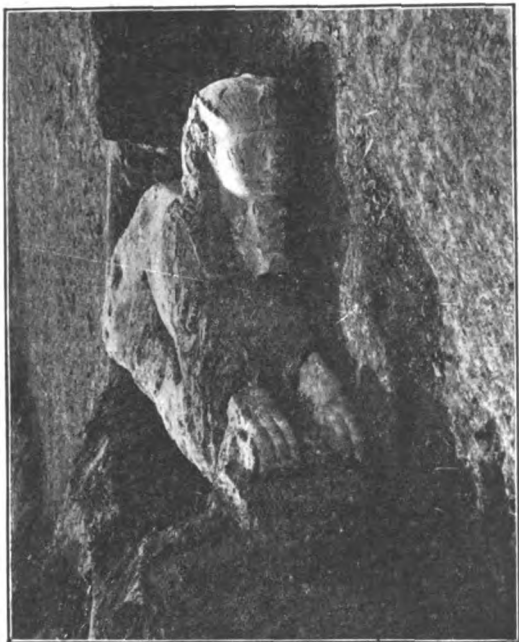
hooded openings called "mulgafs," which caught the wind and carried it down. The furniture in the later examples is seen in the bed, chair, corn-bin, &c.; even the figure of the woman grinding the corn under the stairs appears to have become a part of it. Thus we are carried by these little bits of clay right back into the domestic life of the Egyptian of the Tenth or Eleventh Dynasty, or even perhaps earlier.

To return to this year's exploration and wonderful discoveries, Tarkhan was evidently the cemetery of a city of considerable importance, probably the northern capital of a dynastic race before Mena, the founder of Memphis (First Dynasty, 5500 B.C.), but the city must have declined under the early Pyramid kings (B.C. 4700).

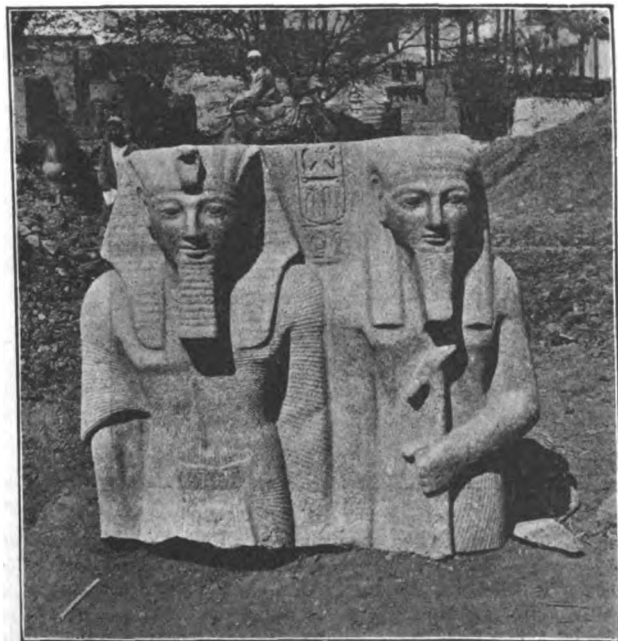
The cemetery, which is situated near the station of Kafr-Amman, covers about a mile length of desert, and is also quite close to Medum, where in former times Professor Petrie had hoped to find a "beginning of things" in the Fourth Dynasty, but was disappointed to discover an already advanced architecture in the small but complete temple built by Seneferu, the first king of the Fourth Dynasty.

Medum has its own cemetery, and would appear to date from the decline of the, as yet, unfound capital.

Nine hundred forms of pottery, hand-made, were discovered, dating from 7500 B.C. to 5500 B.C. The alabaster and basalt bowls and jars which were seen at University College were ground into shape by hand, and not by turning. To enumerate one-half of the wonderful things discovered is impossible, but mention must be made of the great alabas-



ter sphinx which was found at Memphis lying between the two great colossi. It is in perfect preservation, although overturned, in which position it was discovered; but next year it will be set up on its base. It dates from the Eighteenth or Nineteenth Dynasty, and measures 26 feet long by 14 feet high, and weighs about eighty tons.



Another sphinx and a group representing Rameses II. and the god Ptah, all in red granite, were also found at Memphis, which is in charge of Mr. M'Kay.

These discoveries, and the positions in which they were found, all prove Herodotos' statement in regard to the temple, its monuments and builders, to have been absolutely correct. The Ptah and Rameses group has been sent direct to Copenhagen, as it is that country, and not England, that is financing the excavations at Memphis.

MR. P. BRYANT BAKER, of Chelsea, has been commissioned by the King Edward VII. Middlesex Memorial Committee to execute the white marble bust of his late Majesty proposed to be placed in the Middlesex County Hall at Westminster. Mr. Baker was selected out of nine competitors, and his remuneration will be 350 guineas.

THE SOCIETY OF ENGINEERS.

A MEETING of the Society of Engineers (Incorporated) was held at the Institution of Electrical Engineers, Victoria Embankment, W.C., on Monday, October 7. Mr. John Kennedy, president, occupied the chair. After some preliminary business, Mr. E. R. Mathews, A.M.Inst.C.E., F.G.S., read a paper on

Town Planning from an Engineering Aspect.

The architectural aspect of town planning has been, said Mr. Mathews, much discussed of late, but from an engineering standpoint the subject has had less attention. It is easier to regard the matter from the former point of view, for a mere reference to town planning raises in one's mind such questions as whether the houses are to be 12 or 40 to the acre; are to be set back 10 or 30 feet; are to be detached, semi-detached, or in terraces; whether some portion of the area to be laid out shall be reserved for large residences, other portions for workmen's dwellings and bungalows, others for shops, and a further area for factories; or whether the two latter are to be kept out of the area entirely.

At Ruislip-Northwood the town-planning area is divided up as follows:—

$\frac{1}{4}$	of site area to be occupied only by bungalows.
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	houses and larger residences.

The provision of open spaces for parks and recreation grounds, and of sites for public buildings, monuments, &c., all affect the architectural aspect of the subject; but from an engineering point of view many other important matters have to be considered. As town planning in a residential district is very different from that in a manufacturing centre, it is well to consider the two cases separately.

(A) TOWN PLANNING IN A RESIDENTIAL DISTRICT.

The town-planning scheme prepared by the author for the Bridlington Corporation was one affecting a purely residential area. In preparing such a scheme the first matter to be dealt with is to fix the area to be planned. A knowledge of local conditions and requirements is absolutely necessary in deciding this; and those parts of the town in which building operations are likely to proceed most rapidly should be included in the area.

This area having been decided upon, and the Local Government Board's sanction to prepare a scheme for such area having been obtained, the next point to receive consideration should be the direction, width, and method of construction of the various roads.

(1) *Main Arterial Roads.*—At the outset the direction of the through-traffic roads should be fixed, and these should be in such a position that direct means of communication will be provided between one busy part of the town and another, or they should connect up important existing roads. The position of most roads will be determined by the best direction for main and intercepting sewers, and this is a matter for the decision of the engineer. The author strongly urges that none of such roads should be less than 75 feet in width, and that they should be constructed of tar macadam in order to ensure a minimum of dust and noise. The footpaths should be of asphalt, the road should be provided with grass margins and trees, and the author recommends that the houses be set back 25 feet, making a total distance between the buildings of 125 feet.

A brief description of such a road is as follows:—

Width of carriageway	35 feet.
Width of footways	10 feet.
Width of grass margins	10 feet.

Such a road is of sufficient width to take a single line of trams in crowded parts and a double line on the outskirts.

The author suggested the following method of construction:—

Foundation.—The sub-foundation having been carefully prepared and shaped to the finished profile, the foundation should then be laid; this may consist of hand-packed rubble stone, preferably sandstone, or (as at Bridlington) of brick-bats well rolled in with a 10-ton steam roller. In the case of a rubble stone foundation a thickness of 9 inches will probably be sufficient; these stones will be laid on edge, and will vary in length from 6 to 9 inches and in thickness from 4 to 6 inches and be laid lengthways across the street. After the rubble stone has been carefully laid, it should be "blinded" with broken bricks, broken concrete, or broken stone so as to fill up the spaces between the stones. A 10-ton steam roller should then be applied, the road being well watered, until an even surface is obtained. Where

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a brick-bat foundation is used, the author's practice has been to make the depth 12 inches after rolling.

Tar Macadam.—The stone for this may be limestone or one of the softer kinds of granite. The author has found Scotch granite to be admirable for this purpose, and has used it very considerably for tar macadam, greatly preferring it to limestone, after several years' experience with the latter. The stone should be in three sizes, and as regards the relative quantity of each size the author concurred with the suggestion made by Mr. John S. Brodie, M.Inst.C.E., the borough engineer of Blackpool, as follows:—

60 per cent. $2\frac{1}{2}$ inches.
30 " " from $2\frac{1}{2}$ inches to $1\frac{1}{2}$ inches.
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All below $\frac{1}{2}$ inch being discarded.

The tar macadam should be laid and rolled in separate layers, being rolled first with a 6-ton, and afterwards with a 10-ton steam roller. The author suggested a total thickness of 6 inches of metal after rolling.

The metal should be thoroughly dried, and all dust removed before mixing with the tar, which should have a temperature of about 260° . The author has usually had the mixing done by hand, but there are many excellent mechanical mixers in the market, and he would recommend the use of these. The estimated cost of constructing such a road at Bridlington, with brick-bat foundation, would be £4 13s. 8d. per lineal yard of roadway, including footpaths, grass margins, and tree planting.

(1a) **Secondary Roads.**—The secondary roads, which are important roads not carrying through traffic, might be 50 feet in width, constructed like the arterial roads, of tar macadam. The set-back of the houses in these roads might also be 25 feet, and the distance between buildings would be 90 feet.

Width of carriageway 24 feet.
Width of footways 7 feet.
Width of grass margins 6 feet.

A road of this width will allow three lines of vehicles passing. The estimated cost of such a road would be £3 9s. 9d. per lineal yard.

(1b) **Subsidiary Roads.**—These are roads which carry practically no traffic except vehicles coming to the houses in such roads. Under these circumstances they need only be very narrow, say 28 or 30 feet, with the houses set back 20 feet. These also, in the author's opinion, should be of tar macadam, with a thickness of $4\frac{1}{2}$ inches of metal, and the foundations might be a trifle lighter than those in the more important roads. While a large amount of heavy traffic will not come upon them as upon the roads already referred to, a certain amount of such traffic will do so in the way of loaded furniture vans, and other occasional heavy vehicles, and the road should be capable of carrying such loads.

Width of road 16 feet.
Width of footways 4 feet.
Width of grass margins 3 feet.
Depth of road foundation 9 inches.
Thickness of tar macadam $4\frac{1}{2}$ inches.

It may be argued that a width of 16 feet is insufficient, and it must be admitted that it is very debatable whether the cost of maintenance of such a road is much less than that of a road double this width, for the traffic upon a road is nearly always along the centre half of such a road, and therefore this concentrated traffic would cause the narrower road to require almost as much repair in proportion to the traffic passing over it as a wider road. The author, however, urged that as most subsidiary roads are connected to no important roads, that many of them are only *culs de sac*, and that ordinary vehicular traffic on these roads will consist chiefly of light tradesmen's vehicles, a width of 16 feet is sufficient. The estimated cost of such a road would be £2 8s. 5d. per lineal yard.

Cost of Road Construction.—This is a vital point with the landowner, for it determines to a large extent the class of buildings which he must erect if he is to be recouped for his outlay. The by-laws of our towns and cities are unreasonable in their requirements both as regards width and method of construction of roads. How, for example, can one build workmen's cottages when the roads on which these are to abut must be 40 feet in width, with flagged footways, and a heavy type of kerbing, as is the case in many towns? In the author's opinion it is a waste of money to lay flags and put in, say, 12 inches by 8 inches kerbing in such a road, and an equal waste to make such a road 40 feet wide. He has already suggested in this paper that 30 feet is an

ample width for a street of this class, and the footways should be of asphalt with grass margins, the latter being protected by stone edging, say 10 inches by 4 inches. Not only will this effect a great saving in cost, but roads constructed in this manner will present a more rural and pleasing appearance.

The by-laws requiring roads to be 40 feet wide oblige the man who is intent on building small houses to erect these with narrow frontages and deep backs, a class of house which is objectionable in many respects; a wider frontage with a shallow back being far preferable. The author deprecates the terrace type of cottages, which have been designated "colliers' rows"; this class of house would in many cases not have been erected if it had not been for the cost of roadmaking required by the by-laws, making it necessary for the landowner to crowd as many houses as possible on to his land.

It sometimes happens that a residential area in time becomes one through which heavy traffic passes to an industrial area which has sprung up beyond. Who is to pay for the reconstruction of the through-traffic roads in the residential area should such conditions arise? A proposal has been made, with the principle of which the author entirely agrees, that "in laying out land for residential purposes the developers should be called upon only to lay out and construct such roads as are needful to deal with the traffic of such area; and in the event of existing industrial conditions or future developments causing a need for heavier traffic-bearing roads through these residential areas, the extra cost of such roads, over the cost of roads constructed for domestic traffic, should be borne by the community."

The Widening of Existing Roads.—In designing a town-planning scheme it will probably be necessary to allow for the widening of some of the existing roads. This has been the case at Bridlington, where Cardigan Road, which now averages 36 feet in width, is to be widened to 70 feet. In this instance the east side of the road is built up with large residences, but on the west side no buildings have been erected up to the present. The owner of this vacant land, however, is now desirous of erecting houses on that side of the road, and the Corporation are asking him to give up a 35-foot strip of land for the purpose of increasing the width of the road. Experience has shown that owners of land in various parts of the country have, generally speaking, been quite willing to give up a portion of their land for road-widening purposes, for the reason that if their remaining land abuts upon a wider road it will be of more value to them, and the same argument applies to any houses which the landowner may erect facing the wider road. The Corporation would, of course, construct the road. This matter of the improvement of existing roads is an important one, and must have full consideration when preparing a town-planning scheme.

The Diversion of Existing Public Footpaths.—In preparing a scheme it is often advisable to improve the direction of existing public footpaths, for which purpose full powers are given by the Act, and the engineer should give careful consideration to this point.

Open Spaces.—In planning a residential area it is necessary to determine the best positions for parks, tennis courts, bowling green, children's playground, garden enclosures, sites for future public buildings such as public library, town hall, municipal offices, &c., unless the town is already well provided in that way, and land should be reserved for these purposes. In these matters the engineer will confer with the architect, and, of course, consult the various landowners and others who have interests in the scheme, and it should here be noted that great tact on his part will be required in order to ensure the best results for the Corporation he is serving.

(2) **Sewerage and Sewage Disposal.**—Having dealt with the roads in the proposed area, the next matter for consideration is that of sewerage. The engineer must ascertain (a) if the existing sewers and disposal works are capable of taking the drainage from the proposed area, and if not whether it is proposed to enlarge them, or to construct new sewage disposal works for the area to be laid out; (b) whether the levels permit of the area being drained into existing sewers; (c) how the storm water is to be dealt with.

At Bridlington, if a large area is added to the town as proposed, it will be necessary to take out the existing 12-inch northern outfall sewer which discharges into the sea below L.W.O.S.T. on the North Foreshore, and to put in a 24-inch, or probably 30-inch, outfall in its place; also to enlarge the existing screen chamber, and to put in larger sewers for about a third of a mile, from the outfall sewer to the S.E. corner of the area.

Then, again, on the south side of the town, a portion of the area near Bessingby included in the scheme is too low to be drained into the Corporation sewers, and while some of the front land may drain into the existing sewers if the latter are lowered 5 feet (and no doubt this will be done), the remainder of the sewage will have to be dealt with by the construction of disposal works within the area itself, or be discharged by means of a new outfall into the sea.

The land developer should be expected to pay only for sewers of sufficient size to drain the area, and if he is required by the local authority to put in larger sewers, such as may be required eventually if the area is very considerably extended, the authority should pay the difference in cost.

(3) *Lighting*.—The lighting of the area by means of gas or electric light is a matter of great importance, and the cost of the laying down of mains and cables from the nearest supply will have to be ascertained; if the Corporation own these undertakings, they may have to seek powers to extend their lighting area in order to include the town-planned area.

(4) *Water Supply*.—The same remarks apply to the supply of water in the area.

(B) TOWN PLANNING IN A MANUFACTURING TOWN.

The planning of an industrial town or city is a far more complicated matter than that of a residential town. From an engineering and economic standpoint a number of important matters have to be considered; some of these are as follows:—

1. The first point to be decided is the position of the industrial area. To arrive at this one must have local knowledge—that is to say, information regarding existing trades and manufactures, and which of them is likely to develop considerably. The scheme should also be arranged for the inclusion, if necessary, of any new industries, for it must be borne in mind that the industries of to-day in some of our towns were not thought of a few years ago, and that every month fresh industries are being started, some of them, doubtless, having come to stay. The motor industry might be cited as an example.

2. The proximity of this area, with its works and factories, to railway sidings and to main lines for the supply of the raw material, coal, &c., and for the disposal of the finished materials, is a very important matter. Land adjoining railways, rivers, and canals will, generally speaking, be admirable for inclusion in a manufacturing area. In certain trades, of course, it is important that the works shall be situated where there is much water. Bleach and dye works, for example, are generally found on the banks of a river, stream or canal. These points will have to be considered fully by the engineer when planning the industrial area.

Before deciding on any particular positions for railway sidings, the engineer will naturally consult the railway officials; it is preferable that there should be a general siding leading to a number of smaller sidings. It has been suggested that it will pay a landowner in some instances "to give the land to the railway for the siding or sidings in order that engines might bring the goods nearer to the factories and yet remain upon the railway companies' land."

3. The facilities for vehicular traffic to and from this area. The position of main arterial roads, relative to the proposed area.

While in a residential area it adds to the picturesqueness of the district if the roads are radial in plan (and the author strongly recommended this), in an industrial centre direct communication between the area and the railway, wharf and principal parts of the city is of the utmost importance. The connection of the proposed arterial roads with existing roads is also an important matter.

4. The necessity for constructing any new roads leading to this area in such a substantial manner that they will carry the heavy traffic likely to come upon them. All streets of this class should be paved with stone setts laid on a good concrete foundation, and they should be wide enough to take a double tramway track.

4a. The provision of roads for rapid and slow traffic.

The author recommended the provision of two distinct streets running parallel with each other, but intended one for rapid, the other for slow and heavy traffic. He suggested that such a provision is necessary owing to the increasing number of motor-cars and other speedy vehicles using the roads. In the road suggested the footpaths are flagged, they are 10 feet in width, and the rapid-traffic road is constructed of tar macadam, and is 30 feet wide, while the slow-traffic

road is paved with setts and is 34 feet wide, a 6-foot refuge or footway dividing these two roads. The total width of the street would be 90 feet. It is not suggested that trees should be planted in such a street. Some have recommended that the width of the main arterial streets should not be less than 100 feet or even 120 feet, but the author saw no reason why they should be of this great width.

5. The area to be occupied by workmen's dwellings, and the proximity of this to the industrial area.

There is a difference of opinion regarding the best position for the houses of the workpeople. Some maintain that these houses should be away from the industrial area, but situated in an adjoining housing area, while others consider the houses should be built in the same locality as the works and factories, so that the factory hands will be close to their work, and will not have to walk some distance to their homes. The author favoured the first suggestion, chiefly on the grounds of health. Easy communication can be provided between the two areas, and if they adjoin there need be no reason why the workmen cannot get home to dinner each day. Larger gardens can be better arranged for if the houses are in a separate area, and the fact of the dwellings being away from the works has a tendency to enable the factory hands to forget their daily avocation after working hours.

The author favoured keeping the works and the people apart. If the factories are on one side of a river and the houses of the people on the other, ample provision should be made by means of bridges for easy communication between the two sides.

6. The supply of electrical energy to the manufacturing area for power and lighting purposes:—

This is an absolute necessity in an industrial area. The use of electricity for power purposes is becoming more and more common, and from a smoke nuisance point of view this is necessary, for in many cases the proposed industrial area will be adjacent to a residential area.

If the electricity supply of a town or city is in the hands of the Corporation, the electrical engineer should be asked to advise his committee to obtain, if necessary, powers to extend their area of supply, so as to include this proposed industrial area. Cheap rates for power and lighting purposes should be offered to the factory proprietors to induce them to take the current.

7. Whether water carriage is available, and, if so, the position for wharfage upon rivers or canals must be selected, and the estimated cost ascertained.

8. Provision of water and gas. It is necessary to consider the advisability of supplying water power in an industrial area.

9. Efficient sewerage and sewage disposal system.

10. The disposal of storm water.

11. That the area is sufficiently large to allow of ample provision being made for the future development of the various industries.

12. In deciding the position of the proposed industrial area, the prevailing winds should be taken into account, and the area selected should be so situated that the prevailing winds will carry the smoke away from the residential area.

13. The advisability of constructing subways under the main arterial roads to accommodate gas and water pipes, telephone, telegraph and electric cables, hydraulic mains, compressed air and sewer pipes.

This, in the author's opinion, is a matter which in this country has not received sufficient consideration. The present method of laying sewers, water mains, gas mains, &c., under our streets is altogether unsatisfactory. These streets are continually being opened for the purpose of connecting to one or the other of these, and this constant opening of the principal roads is an intolerable nuisance, while the reinstatement is not always satisfactory and leads to a great deal of correspondence with the departments concerned relative to the unsatisfactory reinstatement of trenches.

The construction of a subway is the remedy, and the author recommended this, but owing to the cost he would build the subway in the main arterial streets only. Reinforced concrete he considered to be an ideal material to use in a structure of this kind.

14. *General*.—In the industrial area might be included refuse destructor works, tramway depôt, car sheds, abattoirs, ice factory, and cold stores; it is always best to group these together, and to place them as far away from the residential area as possible.

15. The construction of tramways or light railways in the area is also a matter of consideration.

16. Folly of limiting the height of buildings. If the maximum height of the buildings which will abut on the new street is specified in a town planning scheme, the owner of the land will be almost sure to build to that height, considering it more economical to do so. If it be four-storey buildings that are allowed, and not higher, then there is a danger of a monotonous row of four-storey buildings being erected, whereas a variation in the height of the buildings will be preferable.

17. Having decided the industrial area, the residential area must then be chosen, and the developments of this will proceed on the lines already indicated in the first part of this paper.

The author pointed out the extent to which town planning affects the engineer. Landowners are, he said, welcoming the adoption of town planning throughout the country, as they find that if their land is left outside the area proposed to be laid out it may be undeveloped for years. Local authorities, on the other hand, have now the opportunity of extending their towns on modern lines, and so making the England of to-morrow a country of beautiful cities with open spaces and wide streets. Many authorities have already taken advantage of these opportunities, and have prepared town planning schemes; many others are now doing so, and it was the opinion of the author that in the near future there will be scarcely a town in this country of any importance that has not its town planning scheme in hand. In order to ensure the best results it is necessary in this matter that the engineer shall co-operate with the architect, and that the one shall appreciate the work of the other. Great tact will also be required in dealing with landowners and other interested parties, and experience has already shown that the landowner is not, except in obscure cases, an unreasonable man to deal with, and that if it can be made clear to him that the development of his land on town planning lines will be a great advantage to him he will be found willing to co-operate with the local authority, and, if necessary, give up to the authority pieces of his land for street widening, provision of open spaces, &c. Many landowners have done this, and have become most keen on town planning.

IRON AND STEEL OF ANCIENT ORIGIN.*

SECTION B.—THE SO-CALLED IRON AND BRONZE AGES.

(Concluded from last week.)

CUNNINGHAM points out that, in true Eastern language and hyperbole, the inscription upon the pillar says that "the pillar is called the arm of fame of Rajah Dhang, and the letters cut upon it are equal to the deep cuts inflicted upon his enemies by his sword writing his immortal fame."

The actual date of its first appearance is probably about 300 A.D.

The committee of the Iron and Steel Institute, in about the third year after its formation, made some special inquiries with regard to this pillar. It appears that Lieutenant Spratt, of the Royal Engineers, then stationed at Delhi, stated the height of the column above the ground to be 24 feet, and the depth below ground 3 feet. He said that the column or pillar ends in a bulb like an onion, which is held in place by eight short thick rods of iron, on which it rests, and which at their lower extremity are let into blocks of stone, in which they are secured by lead. The iron of which the pillar is made seems to have been originally in blooms of about 80 lb. weight each.

There are several important inscriptions upon the pillar. These, notwithstanding the long exposure to wind and rain, are reported to be quite clear and sharp, as if no alteration had taken place since the pillar was first made and erected.

It is stated that these iron pillars were probably used owing to the belief in the special power of this metal to counteract demoniacal influence.

Miss Gordon Cumming, in her book "In the Himalayas and on the Indian Plains" says: "I must first tell you about an extraordinary iron pillar, which stands near the base of the Kootub, and to which the city owes its modern name. . . . It is wrought like our finest metal, and shows no symptoms of rust, though it has stood here for many centuries. It bears an inscription in Sanscrit, describing it as the 'triumphal pillar of Rajah Dhava, A.D. 310, who wrote his immortal fame with his sword.' This, however, is the only record extant of his deeds. There are several other inscriptions on the pillar, but of more modern date."

"The Brahmin tradition is that this pillar was erected

in the sixth century, after the stars had pointed out the auspicious moment. It went so deep that it pierced the head of the serpent god Schesnag, who supports the earth. The priests told the Rajah that thus his kingdom should endure for ever. But, like a child gardening, he could not be satisfied till he dug it up again, just to see if it were so, and sure enough the end was covered with blood. Then the priests told him that his dynasty would soon pass away. He planted the pillar again, but the serpent eluded his touch, and the pillar was thenceforth unsteady. So the priests called the name of the place Dhilli, that is, 'unstable,' and prophesied all manner of evil concerning the Rajah, who shortly afterwards was killed, and his kingdom seized by the Mohammedans, and since then no Hindoo has ever reigned in Delhi.

"Nevertheless, the pillar is now firm as a rock, and has even resisted the cannon of Nadir Shah, who purposely fired against it. The marks of the cannon balls are clear enough. Hindoos believe that so long as this column stands the kingdom has not finally passed from them."

The iron pillar at Dhar or Dhara (the ancient capital of Malava, and thirty-three miles west of Indor), had a total length of no less than 42 feet. This is specially interesting owing to its extraordinary length. The three existing pieces measure 24 feet, 12 feet, and 6 feet in length, aggregating 42 feet, in addition to a missing fragment, so that if these figures are correct the column is approximately double the height of the Delhi pillar.

A writer says: "Whilst we marvel at the skill shown by the ancient artificers in forging the great mass of the Delhi pillar, we must give a still greater measure of admiration to the forgotten craftsmen who dealt so successfully in producing the still more ponderous iron mass of the Dhar pillar monument, with its total length of 42 feet, which, like the pillar at Delhi, is of the Gupta period, or about the year 321 of our Christian era."

There are also in existence in India several very large iron girders at Puri, ornamental iron gates of ancient origin at Somnali, and a wrought-iron gun, said to be 24 feet in length, at Nuwiri.

The author has given a detailed description of these two pillars, as they form the only known ancient large masses of iron in the world, so that they are indeed remarkable. But little more than a generation has elapsed since objects of this size and weight were made possible, even in our time.

SECTION E.—REMARKS BY MESSRS. OSMOND AND MASPERO.

The author has shown elsewhere in this paper that the ancient specimens now examined cannot be termed "steel"—that is, in the true sense of the word. They are practically wrought iron, though, as evidenced in the chisel, there is distinct proof that the edges of this specimen have been submitted to a carburising or cementation process of some kind. In this sense, therefore, the chisel may be termed "steel"—at any rate, as regards such edges.

Moreover, if the art of cementing or steelifying articles of iron was known and understood, then with such knowledge it would be quite possible to produce tools possessing excellent qualities, as the cutting edges could then be hardened by water quenching. If this was so, as appears to be the case, then we can readily understand how the works of stone were executed in Egypt.

Whilst upon this point, reference may be made to some interesting correspondence the author has had with Mr. F. Osmond, the eminent French metallurgist. Some time ago the author asked Mr. Osmond if he knew of any specimens of ancient iron and steel in existence, and also whether he knew of any evidence in France as to the ancient Egyptians using iron and steel tools. He was, however, unable to point to such evidence, but made some inquiries in other directions, with the following result.

These remarks by Mr. Osmond appear to be worthy of giving in full, because they have most important bearing upon the question of the use of iron and steel by the ancient Egyptians. Moreover, they probably prove that the nature of the material used by the Egyptians was iron of similar quality to that found in the ancient Sinhalese specimens obtained from the Colombo Museum, and upon which the present research has been carried out.

Mr. Osmond communicated with the well-known Egyptologist, Mr. Maspéro, in Egypt, that in reference to a note he (Mr. Osmond) had presented to the Academy on bronze work of prehistoric times, Professor Riban, of the Sorbonne, stated he understood that during certain conversation at a personal meeting between Mr. Maspéro, when he was in Paris, and Mr. Berthelot, that he (Mr. Maspéro) had referred to the granite-cutting work of the ancient Egyptians.

* Abstract of a Paper by Sir Robert Hadfield, F.R.S. (Sheffield), entitled "Sinhalese Iron and Steel of Ancient Origin," read before the Iron and Steel Institute at the annual meeting.

Mr. Riban understood that Mr. Maspéro had then said that antique paintings or drawings existed, and that these showed each stone-cutter had assistants at his side, whose business it was to repair or sharpen his tools. From this it appeared that possibly tempered steel was not then in use, and that tools were employed made of iron or bronze.

Mr. Osmond then pointed out to Mr. Maspéro that he had received reproductions of paintings extracted from *Monuments de l'Égypte et de la Nubie d'après les dessins exécutés sur les lieux sous la direction de Champollion le jeune* (Paris, 1845, Firmin Didot), which he thought showed that there were sculptors and stone-cutters who did not appear to have assistants to repair their tools.

Mr. Osmond then asked Mr. Maspéro the following questions:—

"Where are the originals showing the stone-cutters with assistants? If there are any reproductions, where can they be found? Are the paintings or drawings showing the stone-cutters with assistants anterior to those reproduced by Champollion? If this were the case, it might be possible to fix the date of the introduction of tempered steel into Egypt.

"I have been induced to investigate these questions by my friend Sir Robert Hadfield, Fellow of the Royal Society of London, who has recently obtained some interesting ancient specimens and documents relating to iron and steel production in Ceylon."

The following is a translation of Mr. Maspéro's reply in March 1911:—

"I was unable to answer your letter until after my return to Cairo, which occurred only a few days ago. This is briefly what there is to be said on the subject:

"1. Mr. Riban did not gather what I said to Mr. Berthelot quite accurately; I was speaking of experiences of mine about 1884-85 at Luxor. In order to obtain an insight into the technique of the Egyptian sculptors, I ordered from a native copyist of great ability a granite statue in Egyptian style. Being present during the production of this statue, I observed that the workman used for cutting the stone points of soft iron with wooden handles. He had some fifty of these at his disposal, which he placed in the handle as he needed them. Each point became softened after three or four mallet strokes at the most. He then threw this away, took another, and an assistant put the softened points in the fire and then hammered them out to put a new head on them. The statue was made—or, rather, the bust, for it only represented a half figure—in about three weeks, all the work being done practically, as one might say, by wearing out the iron and then restoring its points by forging. By being hammered this point became very hard.

"In the monuments there are no representations where a sculptor is to be found with appliances of this kind. It is the modern usage—and by examining the bronze points and chisels in our museums the idea was suggested to me which I have just called to your attention, and of which I spoke to Mr. Berthelot.

"2. There is nothing either on the monuments or in the museums to indicate that the Egyptians used or even knew of hardened steel."

As an observation on the above, the author would point out that the ancient Sinhalese specimens now described—at any rate, as regards the chisel—show distinct signs of cementation, so that a pointed chisel, by being heated for some time in the smith's hearth, or in some other manner, might become carburised, and, therefore, much harder at the point, even if it was not quenched. It would, therefore, seem from the antiquity of the specimens which were obtained by the author from the Colombo Museum that at any rate at least 1,400 years ago chisels of iron, apparently with carburised or cemented edges, were known and in use. It is, therefore, very probable that the same knowledge existed in Egypt.

SECTION F.—CONCLUSION.

The production of iron of satisfactory quality appears to have taken place on a large scale. The results set forth in this paper, and the various facts referred to regarding the production and use of iron in India, show that in ancient times metallurgical knowledge existed to quite a considerable degree.

This is not unnatural, seeing that Dr. V. Ball, M.A., F.G.S., in his admirable and exhaustive work on the "Geology of India," shows that the deposits of iron ore are very numerous in our Indian Empire. He adds his belief that "there are distinct evidences that Wootz was exported to the West in very early times, possibly 2,000 years ago." Without doubt, therefore, as the natives of India had in bygone ages ample sources of iron ore at their disposal, they knew how to produce iron and steel. It seems highly pro-

bable, therefore, that they did actually export their products to Egypt.

If, too, the photomicrographs of the ancient Sinhalese chisel represent the current practice of that time, as probably was the case, the fact that the art of case-hardening or cementing and carburising wrought iron—afterwards quenched in order to produce articles with hardened cutting edges—was known, is an important piece of evidence, and proves that the art of iron and steel manufacture must at that time have been of quite a high order. In fact, combined with the information submitted regarding the remarkable wrought iron pillars at Delhi and Dhar, the pillar at the latter place being at least 44 feet in length, and of considerable diameter, it would appear that even the production of masses which were not possible in Europe until quite recent times was then undertaken. Beyond Nature's own productions of large meteoric masses, the author believes he is correct in stating that no such large masses were ever known to have been produced in the western portion of our globe at this period. Eastern knowledge was, therefore, much superior to that of Europe.

It is important to know whether the facts stated in this paper warrant the conclusion, as they appear to do, that knowledge existed in ancient times with regard to hardening carburised iron. If they do, we shall then have a satisfactory explanation of how the great works of stone, such as those seen in Egypt, were carried out in past ages—that is, probably by means of iron or steel tools, hardened and tempered to carry a cutting edge.

The author will be more than repaid for any trouble he has taken if this paper throws light upon points which have been before obscure, or if it adds but a small chapter to the knowledge and history of the fascinating metal iron—the metal by the aid of which so much has been done to modify and revolutionise the world, specially in its more recent and modern history.

As regards this revolution, one simple illustration will suffice. In the paper to the Royal Society by Faraday and Stodart on "The Alloys of Steel," in 1822—not very long ago—it is described how the various specimens were carefully prepared in London and sent to Sheffield to be melted and cast under the supervision of an "intelligent and confidential agent." Although this was only eighty-nine years ago, there was then no other way for forwarding such specimens except by road—no "iron" road existed.

It is hoped, therefore, that the research may be a suitable addition to the interesting one regarding Indian steel already set before the Royal Society by one of its Fellows, Dr. Pearson, now more than a hundred years ago.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Education in Architecture.

SIR,—A proposal has been made to my Council by some of the more prominent men in the architectural profession to the effect that the Society of Architects should organise a system of education on similar lines to the ateliers of the Ecole des Beaux-Arts. In addition, it is proposed to institute a method of examination which will tend to eliminate from amongst the students all those who show no real aptitude for the profession, and whose energies could, therefore, be more profitably employed in some other calling.

It is felt that this proposal constitutes a wise development, and one which should prove most popular with all grades of the profession, and my Council are anxious that it should be introduced at the earliest possible moment. They have, therefore, appointed a committee to confer on the subject and to consider ways and means. In addition to three of their own members appointed by my Council, the Right Hon. Lord Saye and Sele, Sir George Riddell, Mr. H. V. Lanchester, F.R.I.B.A., and Mr. A. R. Jemmett, F.R.I.B.A., have consented to serve on the committee referred to, and it is anticipated that other prominent educationalists will also co-operate.

I shall be glad to hear from any other gentlemen, particularly architects, who sympathise with the scheme, and who are willing to assist the Society in putting it into operation at an early date.—I am, Sir, yours faithfully,

C. McARTHUR BUTLER,

Secretary of the Society.

28 Bedford Square, London, W.C.:
October 7, 1912.

The Architect.

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FORTHCOMING EVENTS.

<i>Saturday, October 19.</i>
Institution of Municipal Engineers: Joint Meeting of Yorkshire and Northern Districts at Harrogate, commencing at 8 p.m.
<i>Monday, October 21.</i>
Institute of Sanitary Engineers: Paper on "The Hygiene of Buildings," by Mr. Percy L. Marks, at Caxton Hall, Westminster, at 8 p.m.
<i>Wednesday, October 23.</i>
Manchester Society of Architects: Paper entitled "Growth in Architecture," by Mr. Halsey Ricardo, F.R.I.B.A., at 6.30 p.m.
<i>Thursday, October 24.</i>
Sheffield Society of Architects and Surveyors (Students' Meeting): Paper on "The Use and Misuse of Materials," by Mr. F. Radcliff, at 7.30 p.m.
Architectural Association Camera, Sketch and Debate Club: Paper on "Craftsmanship and Architecture," by Mr. L. M. Phillips, at 8 p.m.
London University: Course of Lectures on "French Renaissance Architecture" by Mr. W. H. Ward, M.A., F.R.I.B.A., at University College, London, at 6 p.m. (3) "The Early Renaissance: The Age of Châteaux." Francis I."

ARCHITECTURAL DRAWING AND DRAUGHTSMEN.*

"ARCHITECTURAL draughtsmanship has fallen from the high place it once occupied, and has been cut off from the main stream of Art." These are the words with which Professor Reginald Blomfield, A.R.A., President of the Royal Institute of British Architects, opens the first chapter of his book on Architectural Drawing and Draughtsmen which has just been published. They sufficiently indicate the point of view from which the President of the Royal Institute looks upon modern architectural drawing, and compares it with the work of French and Italian draughtsmen of the seventeenth and eighteenth centuries.

When we look at the examples illustrated in Mr. Blomfield's book we cannot but realise that there is an immense gulf between the draughtsmanship of these past centuries and that of the twentieth century architectural student. A drawing may set out to accomplish one of two things; to represent an object as it is or as it looks. Architectural drawing usually has the former for its object, and is quite distinct from a drawing of architecture.

In the general sense draughtsmen of the seventeenth and eighteenth centuries, whilst they drew largely in line and hence expressed the actuality of the architectural forms that they delineated, at the same time devoted much care and time to the presentation of shade in their drawings, by which they were able to approximate closely to an expression of the visuality of architecture, and in some of the best and most carefully executed work the line has almost entirely become merged in the shading, by which surfaces rather than edges are represented.

The modern architectural student attempts too often to say what he has to say with the minimum expenditure of labour and thought, and hence practises tricks of draughtsmanship which are but the reflection of devices that have been first introduced into geometrical drawings of elevations to give some suggestion of the appearance of buildings which the geometrical elevation represents only in diagram form. Shadows projected according to the laws of sciography and mass lining are amongst these devices which Mr. Blomfield, impressed and enthused as he is by his study of past masters of drawing, reproaches in forcible terms.

The first chapter of the book before us deals with the Purpose of Architectural Drawing, and this Mr. Blomfield considers to be expressed in three different

directions, for he says: "The intention of the draughtsman may be either to make drawings which can be carried out in the building by other hands exactly as drawn, or, on the other hand, he may wish to produce in somebody else's mind the impression of the building as a whole as he conceives it, or he may employ architectural forms as the symbols and embodiments of some abstract idea, the imagery of a world which never has existed in fact and never can," and he goes on to say that some of the French draughtsmen so used them in the seventeenth century, and in a far more notable manner Piranesi in the eighteenth.

The first purpose of architectural drawing is, as we all know, effected by geometrical drawings, plans, elevations, and sections; the drawings used for this purpose are necessarily diagrams, and Mr. Blomfield tells us that, as we know it, this method is comparatively modern; but it is impossible to conceive, and Mr. Blomfield admits it, that Greek temples and Roman thermæ could have been built without careful and accurate geometrical drawings, which were regarded but as a means to an end; and when that end was served they were either destroyed or allowed to perish. It is possible even for us to suppose that Ictinus was as jealous of the precise lines of the Parthenon as the designers of modern racing yachts are of the precise form of their creations, and that the geometrical drawings of the masterpieces of ancient architecture were deliberately destroyed by their authors. There are even some architects in the twentieth century who will not allow their plans, elevations, and details to be published in the professional journals for the benefit either of their contemporaries or their successors.

The second purpose of architectural drawing as defined by Mr. Blomfield, and also the third, involve the use of perspective, as to which Mr. Blomfield suggests that a draughtsman is justified in modifying the representation of a building that would result from setting up a perspective according to the strict rules of the art; that he may emphasise part of the building in one place, modify it in another, availing himself, in fact, of these principles of selection and restraint which every artist has to employ in the statement of his impression. Mr. Blomfield might have done well in this connection to point out for the benefit of the young student that the perspective of a building, according to the strict rules of the art, is a diagram quite as much as a geometrical elevation, and does not accurately represent a building as we see it or as it looks. The most striking illustration which a student can have of this truth will be offered him by setting up a series of piers in a row, with spherical balls on top according to the strict rules of perspective. He

* *Architectural Drawing and Draughtsmen.* By Reginald Blomfield, A.R.A. With one hundred and three illustrations. (London: Cassell & Co., Ltd. 10s. 6d. net.)

will then understand that neither he nor anybody else would dare to draw these spheres exactly as the rules would enjoin.

The position of architectural draughtsmanship in mediæval times is a matter that is certainly difficult to determine, in spite of the existence of some drawings, principally German, which might have been prepared for the A.A. Sketch Book of to-day.

Mr. Blomfield takes the view that architectural drawing as we now understand it really dates from the earlier days of the Italian Renaissance, and that "it is, by its very nature, essentially a modern art, a complement of methods of architecture and archæology which were undreamt of in the Middle Ages, for it was the revival of scholarship that brought about the study of archæology, and the two together that revolutionised architecture"; but even then he recognises that "the astonishing thing is that architectural draughtsmanship should appear in Italy, completely equipped, within certain limits, in the latter part of the fifteenth century." This would almost seem to indicate that there existed architectural draughtsmanship of no mean quality earlier than the Renaissance period, and that the Italian draughtsmen of the sixteenth century did not evolve their art *ab initio*, but improved upon the work of their mediæval predecessors. Be that as it may, it is in the productions of architectural draughtsmen in the sixteenth, seventeenth and eighteenth centuries that Mr. Blomfield has found a subject which appeals to him personally, and on which he has evidently expended an immense amount of research, the results of which are given to us in this book, wherein he has explained in lucid language the merits of those productions with a keen perception of the forte and foible of each of the draughtsmen whom he has introduced to our notice.

The essence of the lesson that he teaches is that at the bottom of bad draughtsmanship lie imperfect powers of observation. "The eye has not been sufficiently trained to become sensitive to refinements of form and to subtle relations of proportion, a faculty which is essential to fine architectural design." We might add, good draughtsmanship can only come from clear thinking. If he is representing that which exists a draughtsman can only produce a good drawing when he perceives accurately and clearly. If he is endeavouring to express his own invention he must similarly conceive his design with certainty of intention. No such power can be obtained by learning tricks of drawing and conventional methods.

The student who would get the fullest value out of this charming book must realise that the men whose work is reproduced knew what they had to say, and that the matter of their message is of infinitely more importance than the methods by which they expressed it. Mr. Blomfield's scholarship and research will have been worse than wasted if they should be utilised by draughtsmen of the present and the future to discover and adopt more tricks by which to save labour and thought.

NOTES AND COMMENTS.

THE proper lighting of the interior of buildings, especially by artificial light, is a matter of hygienic importance that is gradually becoming recognised by Governments, both abroad and in this country. The French Government has appointed a committee on the hygienic aspects of illumination composed of prominent physiologists, oculists, engineers, physicists, and inspectors of factories. The main objects of this committee are to study, from the standpoint of general health, and its effects upon vision, the various methods of artificial lighting now in use; to determine the composition and quality, from a hygienic standpoint, of the different combustible illuminants, and to examine the effect of prejudicial gases, and the amount of heat developed thereby; to fix a certain minimum amount of artificial illumination favourable to the normal requirements of vision; to study the most practical methods of measuring illumination; to formulate recommendations governing the best means of applying customary methods of lighting to the chief varieties

of industrial operations; to present to the Ministry a report on the subject of short sight and impairments of vision, and on the best methods of guarding against the causes of myopia.

The lead that has thus been given is, we hear through Mr. Leon Gaster, hon. sec. of the Illuminating Engineering Society, likely to be followed by our own Government, and a departmental committee instructed to make a similar inquiry in this country. There can, we fear, be little doubt that the eyesight of children is often seriously injured during the school age by improper lighting, more particularly where artificial light has to be used; but still, to some extent, affected by the improper use of daylight. It must certainly be within the observation of all of us that children are not, during the school age, instructed to be careful in placing themselves so that the light falls properly upon their work.

The account that has been given in the *Chester Chronicle* of the recent discoveries at Chester Cathedral, which have been made in carrying out repairs to the cloisters, owing to the collapse of part of the groining of the east cloister, are of an interesting character. The work now in progress (under Mr. Gilbert Scott), by Messrs. Thompson, of Peterborough, became urgently necessary through a collapse of some of the groining of the east cloister. In restoring the masonry, the workmen found it necessary to examine the outside roof, on which and the adjacent roof of the chapter-house vestibule was a superimposed mass of earth and debris, varying in depth to a maximum of about five feet, with heads and bases of Early English pillars scattered promiscuously among the rubbish and wreckage of demolished buildings. The theory entertained is that the debris represents the ruins of buildings demolished or fallen into decay. It is known that in monastic times the monks' dormitories were over the east cloister. Later they were probably utilised as houses for the lay clerks until they fell into ruins. There have been revealed several architectural features, including the Early English archway of a former building incongruously in situ in the cloister roof, a quatrefoil window (one of three) at the head of a flight of steps, and a doorway communicating with a staircase through which the monks would go from their dormitories to say their night offices in the church. There have also been discovered (on the cloister side) three bricked-up small arched windows in the south wall of the refectory just above the beautiful "reader's pulpit." These windows probably will be restored, and the Dean (Canon Gore) and the Precentor are keenly in favour of restoring the refectory as a whole. The cost would be about £10,000.

We regret to hear of the death, in his eightieth year, of Mr. James Parker, who has rendered valuable assistance to several generations of students of English mediæval architecture, by his well-known text-books, "The A.B.C. of Gothic Architecture" and "The Introduction to Gothic Architecture." Born in 1833, he was the son of Mr. John Henry Parker, C.B., also a famous antiquary, and member of a family which claimed descent from Samuel Parker, Bishop of Oxford in the reign of James II. Mr. Parker was educated at Winchester, and received the honorary degree of M.A. at the Oxford Commemoration in 1877. Mr. Parker was the mainstay of the Oxford Architectural and Historical Society, and held various positions in connection with it. The proceedings of the society are full of papers by him, and for a number of years he conducted excursions of the members. He possessed a mine of knowledge of the early history of the society, which is really the history of the Gothic revival. One of Mr. Parker's best-known works is the "Early History of Oxford," published in 1884—the first book on the history of the University city, in which the writer has gone to the original manuscript authorities. He collated all the different manuscript versions of the "Anglo-Saxon Chronicle."

The mercantile world of Liverpool has experienced a grievous disappointment in the abandonment of the projected scheme for the erection of a new Custom House on the old George's Dock site at the Pier Head. The whole of the central site, comprising a building area of 6,700 square yards, has been purchased by the Cunard Co. from Messrs. Cubitt & Co., of London. It appears that there has been a certain amount of muddle and misunderstanding in the negotiations which have been going on between the Corporation, the Government, and Messrs. Cubitt & Co. The result is that the Corporation will get their full price for the central George's Dock site, and a very fine building will be placed upon it by the Cunard Co.

An interesting announcement appears in the *Times* of the discovery in Wales of the most ancient painting in Great Britain, which is the first example in this country of prehistoric cave painting of the kind already familiar to palæontologists from the caves of Dordogne, the South of France, and the Pyrenees and the Peninsula of Spain, and has been recently discovered on the walls of Bacon's Hole, near the Mumbles, by Professor Breuil and Professor Sollas.

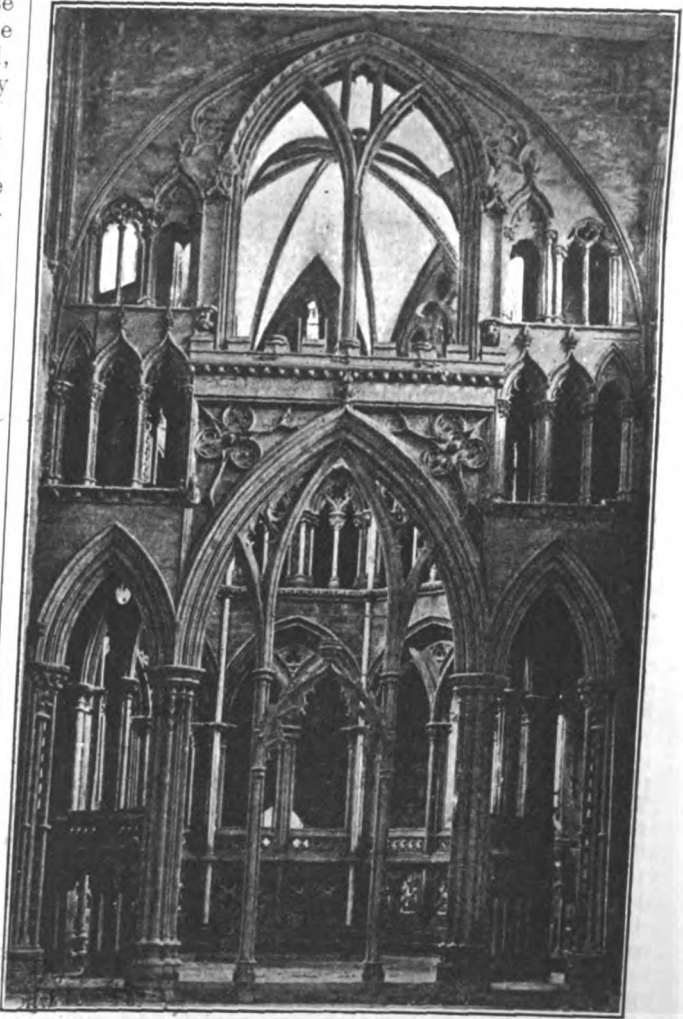
We are asked to call attention to a course of six educational lectures on concrete, its properties and manufacture, which will be given by Mr. H. Kempton-Dyson, Secretary of the Concrete Institute, on Tuesdays, November 12, 19, 26, December 3, 10, 17. These lectures will be given in the lecture hall of the Concrete Institute at Denison House, 269 Vauxhall Bridge Road, Westminster, and are free to all who obtain a ticket by application to the Secretary of the Institute.

Mr. Frank Latham, in his presidential address at the Institution of Mechanical Engineers, spoke of the architectural character of the work, which is part of the duty of the so-called municipal engineer, in the following terms: "The civil engineer of to-day, however, does not profess to be an architect, but the municipal engineer cannot afford to neglect this very important and artistic side of his profession. A substantial knowledge of architecture is essential to his success, as buildings of various descriptions have to be designed and constructed under his supervision. He is called upon to advise his council on the laying out of estates and the examination of building plans, while he has the planning of many schemes which must necessarily call for artistic treatment at his hands. A municipal engineer engaged at any seaside resort would be quite unsuited to hold his position without a knowledge of architecture, by which he could design and carry out the works expected of him. The interests of the municipal engineer require watching in this respect, for their profession is so intimately associated with architecture, as well as with civil engineering, that no legal rights of status or protection should be granted to either one profession or the other without the rights of the municipal engineer being recognised on both sides. The present-day engineer's attention is so much engrossed by the scientific and mechanical sides of his profession that the very sentiment of the artistic is abandoned and neglected, and its place among the liberal arts is long since forfeited. The municipal engineer, however, must not be persuaded that he is essentially a civil engineer; his training must be broad and varied, and while a knowledge of the mechanical sciences is necessary, he must cultivate the artistic side. Architects to-day are mastering so many matters of extreme importance to municipal engineers, especially since the advent of reinforced concrete construction, that the municipal officer may be more fitted in many respects if drawn from the architectural profession than from that of pure civil engineering. To be a competent engineer to a municipality a man must be cultivated in every direction—civil and mechanical engineering and architecture."

In the *Antiquary* for this month there is an interesting article on the Sanctuary and Basilica of St. Martin at Tours by Mr. J. Tavenor Perry, with a plan reduced from the survey made for the commission in 1864, showing the general arrangements of the building as it formerly existed and the parts that now remain of the Abbey Church of St. Martin. In this Mr. Perry gives a new and ingenious derivation of the meaning of the word chapel, which *si non è vero, è ben trovato*.

THRONDHJEM CATHEDRAL.
By J. TAVENOR PERRY.

THE three metropolitan churches at Lund, Upsala, and Throndhjem are the most important ecclesiastical edifices in Scandinavia, but they all bear distinctly the impress of foreign influence in their arrangement and design. Although the Vikings, particularly during the pre-Christian period of their history, were able to produce the most beautiful works in bronze, wood, and ivory, the more important art of architecture never found a natural home among them; and their warlike habits continually engaging them in foreign or internecine quarrels, compelled them to rely on the architects of other races for the production of their public buildings throughout the mediæval period, and, indeed, until the time when De Tessin erected the huge Stockholm Palace for Charles XII. Hence it is that these three cathedrals are, respectively, so distinctly German, French, and English in their character, and lend such an appearance of probability to the traditions which attribute the design of Upsala to



INTERIOR OF EAST END.

Etienne de Bonneuil, of Paris, and that of Throndhjem to Prior Thurgot, of Durham.
The semi-mythical period of Norwegian history, during which the people oscillated between heathendom and Christianity, ended when Olaf the Saint became king; and although there is much that is perhaps legendary in the stories we have of his life, the main incidents in it are clear and well authenticated. His godfather, Olaf Tryggvason,

the introducer of Christianity, had already founded the town of Nidaros—Nidmouth, as we should call it—at the mouth of the river Nid, south of the great fjord, as the chief city of the Thronanders; hence its modern name of Throndhjem. The site was a sandy peninsula sloping gradually towards the sea, and rising to the south, where the river made a half-circle round it, into a little hill. On this higher ground Olaf erected his hall, and in connection with it a wooden chapel dedicated to St. Clement. After the ruin and death of Olaf Tryggvason this hall and chapel seem to have been destroyed, but about 1016 Olaf the Saint rebuilt St. Clement's in stone, and was himself buried in the ground to the south of it, a little nearer to the river; and in 1031 his body was raised and enclosed in a wooden casket and placed within the chapel. This may have only been intended as a temporary arrangement, as Magnus, the son of the saint, erected over the site of his father's grave a small wooden chapel which occupied the exact position of the termination of the present choir; and then, or soon after, the shrine of St. Olaf was removed into it. To the west of this chapel Harald Haadraade, the son of Magnus, built another small stone church, thus forming a group of three buildings quite distinct from each other.

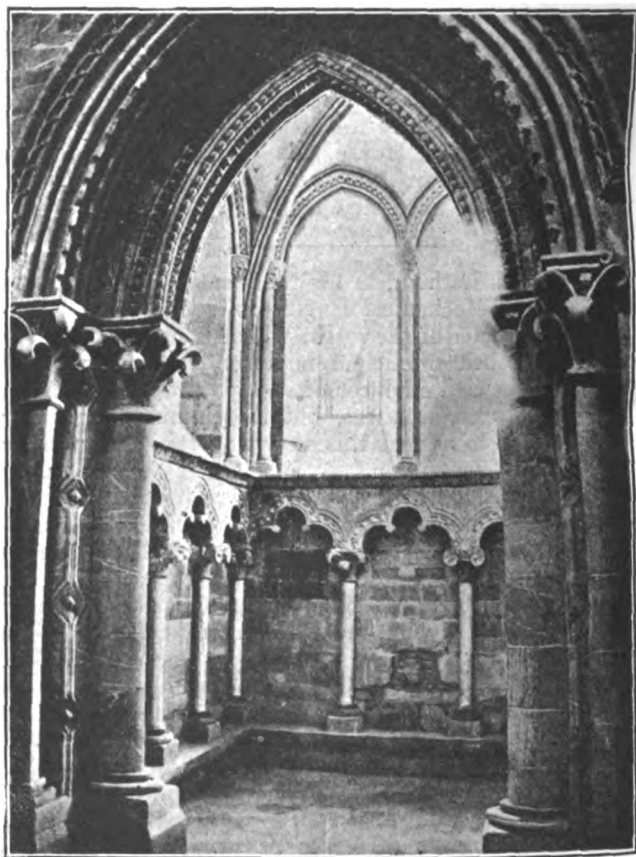
After the death of Harald at the battle of Stamford Bridge, Norway had a peaceful time under his son Olaf the Quiet, during which this group of buildings may have undergone great changes, as we are told that the king, with the assistance of Thurgot the Prior of Durham, built the cathedral. Unfortunately no building work answering to this period now remains, and the story, at least so far as it relates to Thurgot, is open to considerable doubt. Thurgot was certainly in Norway as an exile during the time of Olaf, and seems to have been engaged in some unecclesiastical work, for he is said to have amassed some wealth which he lost by shipwreck when returning home, and so took to a religious life. Becoming a monk he was placed by Bishop Walcher with Aldwin at Jarrow in 1074, and he does not appear to have had the opportunity of revisiting Norway during the remainder of his busy career. From 1087 to 1109 he was Prior of Durham under Bishops William of St. Carilef and Ralph Flambard, a period of most important building operations in Durham Cathedral, and later he became Bishop of St. Andrews.

In 1140 Nicholas Breakspeare, then Cardinal of Albano, was sent on a mission into Scandinavia, with the result that Throndhjem was made the seat of the Primate of Norway, and Harald's small stone church became the cathedral. Eysteen, or Augustine, was consecrated as the first Archbishop; and there is some probability that he, like Henry, whom the Cardinal consecrated Bishop of Upsala, was an Englishman, as, when driven by political troubles from Norway in 1180 he sought refuge in England, and in the extensive works he executed at Throndhjem he was undoubtedly inspired by English models. Eysteen commenced the enlargement of his church by building to the west of it a tower and short aisleless transepts, each having on its eastern face a large square chapel, and the view we give of one of these will show very clearly the character of the work and its similarity in detail to much of the architecture of Durham. The date when these works were in progress synchronises with a pause in those of Durham, between the completion of the chapter-house and the commencement of the Galilee, and when the first church of Hartlepool, of which the south door is the sole relic, had just been completed; and it is not improbable that some of the unemployed masons found their way from that port to Throndhjem. This is confirmed by the appearance among the capitals of the transepts, as well as in the chapel of St. Clement which Eysteen is said to have rebuilt, of the transitional volute which forms a feature in all Pudsey's buildings, as well as at Darlington and the second church of Hartlepool, which was begun before the close of the twelfth century.

After Eysteen's flight to England in 1180 there was a pause in the work at Throndhjem for fifty years; and when in 1231 Archbishop Sigurd recommenced building it is not quite clear on what part he began. It is evident that the tomb-house was rebuilt about this time, but whether as an isolated building, as was suggested by the late Mr. Street, cannot now be determined, although the position of its elaborate doorway on the south-eastern face would seem to confirm this theory. It could not, however, have remained for long isolated, for whether or not Sigurd had ever made a pilgrimage to Canterbury, he had doubtless become aware of its peculiar arrangements, and he may have conceived the idea of so far imitating them as to join his choir on to the

tomb-house and make that play the part of Becket's Crown. Whether the old choir, Harald's original stone church, was entirely removed is doubtful, and the idea mooted in the *Ecclesiologist* is perhaps correct that the choir, which was a close one like Rochester, consisted of the old building enclosed within new aisles and extended eastwards to join the tomb-house. The arcades of the new choir were, however, not parallel, but opened out considerably towards the east so as to give as wide an opening as possible to the tomb-house, and the narrow aisles followed the same slanting lines. That the aisles were an addition to the width of the old choir is shown by the pointed arches which have been cut through the eastern walls of Eysteen's transepts and the alteration of the triforium arcades.

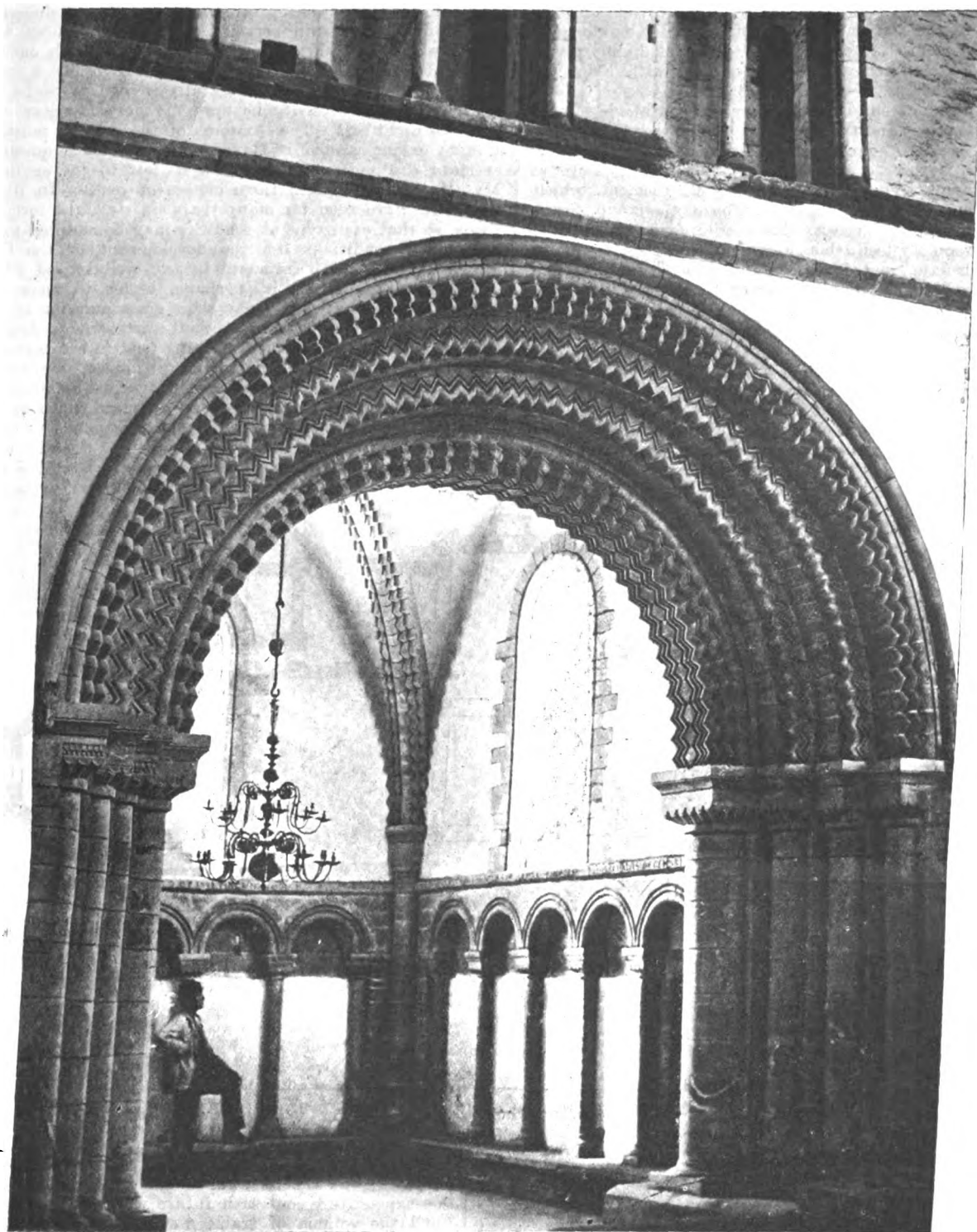
In 1248 the westward extension of the church was commenced, but how far it progressed we cannot be sure, though it seems certain that what promised to be a most beautiful example of the Early English style of architecture was never completed. As designed it would have consisted of a central nave with two aisles measuring about 132 by 70 feet internally, and a west front extended beyond the aisles by lateral chapels, the whole measuring 125 feet across. It was intended to be vaulted, the aisles being lighted by pairs of simple lancets with a small pierced circle over them in one group, but without any enclosing label. As the whole of the interior of the nave has been destroyed we can only judge of the manner in which it was intended to be finished by the lateral chapels behind the west front screen, which fortu-



LATERAL CHAPEL OF NAVE.

nately remain perfect; and these present such remarkable deviations in their enrichments and carving from ordinary Early English work as to show that carvers, other than English, were employed upon the building. Bead-and-reel enrichments are intermingled with dog-tooth, whilst some of the capitals of the trefoil wall arcading might pass for south French Romanesque.

The west front of Throndhjem was its great glory; and our illustration showing it in a state of unrestored ruin will give some idea of what it was, or at least of what it was intended to be. There is an engraving by Mascius, dated 1661, showing another gallery of niches above the present, and from this and from contemporary accounts we find that a central trefoiled niche above the main entrance contained a sculptured representation of the Crucifixion, with the Blessed Virgin and St. John, and in the niches on each side were the Twelve Apostles and Martyrs. Mascius's engraving shows all the niches as, in his time, occupied, but as he



CHAPEL IN TRANSEPTS.

also shows eight niches only instead of nine on each side of the centre, and misplaces even those statues which still remain, his scheme of iconography cannot be relied upon. The five statues which are still left are too dilapidated for identification, with the exception of one which seems to be intended for St. Denis. In 1661 the lower portion of the great west window still existed, with a series of figures in niches having pediment heads on each side for the width of the west front to the upper part of the nave. Whence the design for this beautiful front was derived it is impossible to say; but in the smallness of its doorways and other details it is essentially English, although no particular example can be pointed out from which it could have been copied. The character of the sculpture and the general arrangement of the plan recall Wells, with which it was almost contemporary, while in many details it suggests some affinity to the Nine Altars at Durham; and it is not improbable that one of Prior Melsanby's masons, who was not unacquainted with Salisbury, may have been entrusted with

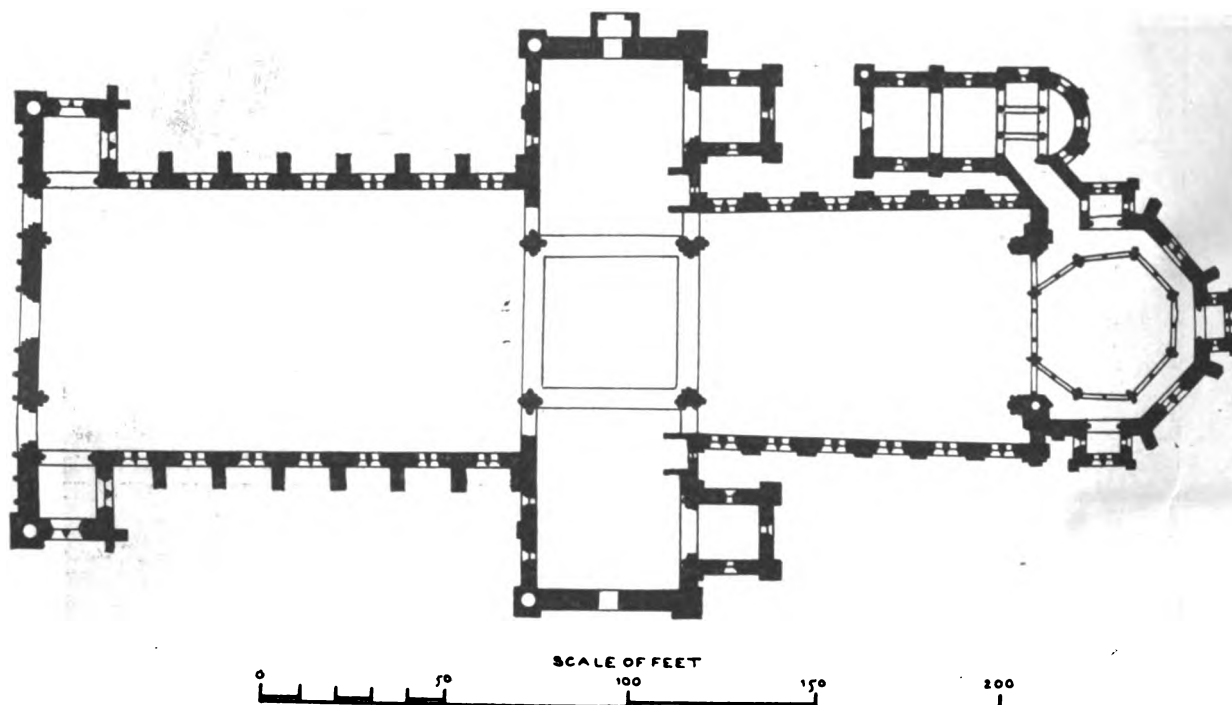
the work. The bold moulded and weathered plinth of the front may be compared with those of Hartlepool and Tynemouth, and forms an additional proof of the English origin of the design.

In 1328 the cathedral was severely damaged by fire, and it is uncertain if anything was done afterwards to restore the west end of the church, for in 1531 it was again burnt out and left unrestored; while the fall of the central tower in 1689 completed the ruin of that part of the fabric. It would seem, however, that the tomb-house was thoroughly restored and in part rebuilt, undergoing at the same time some important modifications. In this reconstruction a large part of the western half of the octagon was destroyed and rebuilt on different lines so as to make it more accessible to the choir; and to this may be due the singular irregularity of this part of the building. But in this restoration, even where it amounted to rebuilding, the main features of the original design were strictly adhered to, so that, looking at it generally both inside and out, it might very well pass for

the work entirely of one period. But there are certain details, such as the tracery of the triforium arcade and in the screen at the east end of the choir, of a later date and so distinctly Kentish in character as to make it highly probable that the restorer was well acquainted with Prior de Estria's work at Canterbury.

The conventual buildings stood on the south side of the church, between it and the river, but they have been entirely destroyed, leaving, however, slight traces of the cloister and marks of a slype or chapter-house against the walls of the south transept. The little chapel of St. Clement, which occupies the site of the earliest building of the group, fortunately still remains perfect. Its rebuilding was attributed to Archbishop Eysteen, though it may belong to a slightly subsequent date, and it presents a curious admixture of German and English detail. Externally it has the appearance of a small Norman apsidal chapel of the simplest form, but its plan, as will be seen from our sketch, is somewhat complicated. The square portion is vaulted in two bays of quadripartite vaulting, with a large roll on the diagonals, and across the chord of the apse is a screen, vaulted in three bays, showing towards the nave a great trefoil arch of a very German character. The side bays of this screen contained altars, but the centre was open as a passage to the altar in the apse. From the southern bay of this screen a way has been formed giving access to the tomb-house, made

certain extent the architectural aspect of town planning must of necessity take precedence over the engineering standpoint, and within certain limits the engineer will step in when the architect has completed the rough outline of his plan, just as in the architect's design for a great building the engineer can be usefully invited to confer on details which of necessity he must be more familiar with than the architect. The contour of the ground must to a large extent govern its laying out, and such questions as main drainage must of course be left to the engineer. Mr. Mathews suggested three classes of roads. In Blackpool there have been for many years six standard forms of roads, so that each type of roadway may be adapted to the economical conditions for the development of the land, which are after all paramount in any well-devised scheme of town planning. It is, perhaps, better to have wide spaces between building lines than grass margins as part of the roadway, except in special cases where they can be well looked after, as such margins tend to become untidy and depressing. The benefits of ultimate wide arterial roads can quite easily be secured for future use by authorities acquiring land for highways of an ultimate width of 60 to 100 feet, and allowing owners in the meantime to enclose in their front gardens or lawns so much of the width as is not necessary for immediate road purposes. It will be found that in many cases a 36 ft. roadway—of 21 ft. carriage-way



THRONDHEIM CATHEDRAL.—REDUCED FROM PUBLISHED PLAN BY H. E. SCHIMER.

probably when this was restored after the fire; but originally there does not appear to have been any connection between the buildings.

The walling throughout was in a coarse talcose schist, intermingled with quartz brought from quarries near by, which must have given it a somewhat sombre aspect; but when complete, if indeed the western parts were ever completed, the appearance of this group of ecclesiastical buildings, clustering on the hill above the town, must have presented a striking appearance on entering the river from the fjord, worthy of its rank as the metropolitan church of Norway and the crowning place of its kings.

THE SOCIETY OF ENGINEERS.

A MEETING of the Society of Engineers was held at the Institution of Electrical Engineers, Victoria Embankment, W.C., on the 7th inst., when Mr. E. R. Mathews, A.M.Inst.C.E., F.G.S., read a paper on

Town Planning from an Engineering Aspect.

A lengthy report of the paper was given in our issue of last week.

Mr. John Kennedy, the chairman, having formally moved a vote of thanks, three communications were read.

Mr. John S. Brodie, M.Inst.C.E., borough engineer of Blackpool, in a written communication, said that to a

and two 7 ft. 6 in. footpaths—will be ample for present purposes; and the land for future widening being secured, the expenditure on such future widening can be deferred until the volume of traffic warrants it, and should then be borne by the community and not by the abutting owners. It is open to discussion whether the German method of purchasing the freehold of land immediately adjacent to the town area—a method adopted at Blackpool with much success for some years past—is preferable, so that the municipality reaps the advantage of the increased land values rather than the individual land owners.

Mr. J. W. Cockrill, M.I.C.E., A.R.I.B.A., borough surveyor, Great Yarmouth, in a letter, remarked that town planners will complain that Mr. Mathews insisted on too high a standard for roadmaking. The estimates given are low for the work proposed, and could not be executed for the money in all parts of the country. It had been recently pointed out that "the Housing and Town Planning Act gives remarkable facilities for the making of bargains between local authorities and land owners, and the extent to which the Act is used will largely depend upon the extent to which those interested in the land meet those interested in civic progress in friendly co-operation for mutual benefit." The by-laws in most towns frequently come in for a large share of hostile criticism by town-planners and a section of the public, especially in their result on the planning of corner houses and in the question of drainage. As to the first,

the experience of what has been done by architects and builders in overcrowding sites where there has been no by-law controlling this matter gives no encouragement to the relaxation of this by-law; and in the second item, until the law is altered which provides that each house must have its separate drainage local authorities will not be prepared to accept the responsibilities involved in giving way on this point.

Mr. Ebenezer Howard, in opening the discussion, said that Mr. Mathews had divided his paper into two sections as though those two included all possible cases. But there was a third type of town planning which is very little thought about at the present day, but which will be later largely thought of, and that was a town planning scheme in an agricultural area. It was well to remember that the town planning at Letchworth embraces an area seven times as large as the old walled-in city of London, being 4,500 acres in extent. There they had an instance of what he might call town planning *ab initio*. In fact, he contended that town planning in its real and in its primary meaning consisted of the building of new towns, and not the building of additions to existing towns. In this country where there were so many large towns growing and developing, the question as to the way they are to grow must be a very important one. The author had talked about the making of such provisions in regard to roads as will enable them to be widened if necessary afterwards at comparatively little expense. At Letchworth they had had to deal mainly with two types of roads: (1) those existing on the estate, and (2) those that had to be specially constructed. One of the first-mentioned kind was very narrow in places, and their architect advised that leaseholders along it should be allowed to use certain land abutting on the broadened road line on the understanding that if the land was required for the widening of the roads they would surrender it. In his own opinion grass margins were more suitably placed when the road is not a wide one between the side-walk and the houses, and that it was still better to allow the tenants of the houses to utilise what would be otherwise grass margins on the understanding that they will give up this land when required. At Letchworth they dealt with their area from the point of view that where there was then a purely agricultural district there would grow up a considerable town with many industries. So they considered where they would allow them to come; they naturally selected a site near a railway, and there there has since grown up many important industries of wide variety. They also had to decide whether the housing of the people should be adjacent to the works or not; eventually they decided to set aside land for this purpose near the proposed works. At Letchworth they had now nearly eight thousand people. A workman can there go back to his house for his meals, and opportunities for recreation during his free time are close at hand. It was to be hoped that engineers would recognise that in this country there were vast acres left as wildernesses, and that there were latent possibilities lying dormant in these unoccupied and unused acres for the development of healthy, beautiful, and useful towns which will rival in a perfectly natural and healthy way the old towns, so that the rivalry will produce beneficial effects on both. Any town council or landlord which proceeds upon the old lines of overcrowding their land area (though by so doing they might make immediate profit) are allowing cottages to be put up which will be soon out of date and which no respectable workman will occupy.

Mr. Holroyd Smith said he must compliment the projectors at Letchworth for the great work they had done. Everyone, of course, knew that in these matters it was easy to deal with a clean sheet. His own experience of American cities was that, while the gridiron plan enables people easily to find their way about, it necessitated a huge walk to get from one corner to another. He would suggest that the basis of a new town plan should be not squares but hexagons. The latter would allow of opportunities for fine architectural effects which cannot be obtained when the basis is a square. He had long been contending that the usual section of a road was a wrong one, and that it should be made not on a curve as at present, but sloping from each kerb towards the centre. The numerous motor-car accidents were nearly all caused by the vehicle slipping down the camber of the road towards the pavement. Another contention of his was that the accepted method was wrong of dealing with traffic at busy spots like Ludgate Circus and Oxford Circus, where four roads meet. A Frenchman had advocated that instead of holding up the east and west vehicles while the north and south streams cross and vice versa, all the vehicles should be made to go round in a circular direction until they came to the road down which they wanted to proceed.

Mr. C. T. A. Hansser stated that his experience in St. Petersburg was dead against streets draining to the centre in the manner the previous speaker proposed. The bulk of the rain-water flowing into a street came from the adjoining houses and courtyards, and gets away by means of the gullies at the kerb. But if that water has to reach the middle of the street before it can escape it is impossible to keep the streets clean. In St. Petersburg, in spite of an army of men there was always much mud and accumulations of water. He believed that the correct principle was to have the gullies at the kerbs where the water can be got rid of as quickly as possible. In planning new cities it was important to avoid the centralising of people in the factory districts. He hoped the day would come when each family would do its work not in a large factory but at home, and when transport from one cottage to another would be as easy as from one part of the factory to another.

Mr. Davidge, A.M.Inst.C.E., said that they must bear in mind that with such a subject as that under discussion it was necessary to secure the co-operation of a large number of professions. The architects seemed to have been doing most of the talking about town planning, but engineers had had a very long innings previously. He was afraid that the architect will only come in as an afterthought. One looked to the engineer to bring the architects down to earth again after their flights of fancy.

After some further discussion the vote of thanks was put by the President and carried with acclamation.

Mr. Mathews, in replying to the discussion, said that many local authorities were not doing now as much as they ought to do in this matter from fear of involving the town in some expenditure. In Bridlington the council had during the past fourteen years spent over £50,000 in street-widening—all, or most of which, might have been saved by forethought in the past. Letchworth had been laid out on modern lines and was a credit not only to this country but to Europe. He was pleased to hear that the Ruislip-Northwood Council were going to try and obtain some control over the elevations of proposed buildings.

THE SOCIETY OF ARCHITECTS.

THE annual report of the Council of the above Society for the year 1911-12 covers all the points of interest to the members. Among the various matters dealt with are the following:—

Registration of Architects.—Early in the session the Council of the Royal Institute of British Architects, after further consultation with the representatives of the Society, drafted a new supplemental charter and by-laws to enable the arrangements previously provisionally agreed upon to be carried into effect, and in January last a special general meeting of the Royal Institute was held to consider the question of applying for a new supplemental charter and by-laws to authorise the Council of the Royal Institute to enter into a conditional agreement with the Council of the Society of Architects. A copy of these documents and the explanatory statement of policy drawn up by the Royal Institute and submitted to their members was at the same time sent to the members of the Society for their information. At this meeting the whole matter was referred back to the Council of the Royal Institute, who thereupon appointed a committee to consider and report upon the subject. It is understood that this committee has held a number of meetings, and that from time to time it has been reconstituted or strengthened, but up to the present the result of its deliberations have not been made known to your Council. The Council of the Society of Architects had, as stated in their last report, already decided that the routine work of the Society should continue without reference to the negotiations proceeding between the two Councils, and they have now decided to also take up the registration question and to resume activities at the point at which they were temporarily suspended two years ago pending the negotiations referred to. Steps are therefore being taken to reintroduce the Society's Registration Bill during the next Session of Parliament.

General Purposes Committee.—This Committee have met five times, and has been principally engaged in carrying out an instruction from the Council to embody in the articles of association the scheme adopted by the Council for reorganising the Students' Section and examinations, &c., and in considering and reporting upon the desirability or otherwise of amplifying or revising the articles in other directions in order to better meet the present requirements of the Society and to provide for future developments.

Professional Defence.—The question of forming a Board of Professional Defence for the purpose of advising and if necessary assisting members in cases involving matters of general professional interest to the profession on points of practice has been carefully considered, with the result that an Advisory Committee has been formed consisting of the President, the Vice-Presidents, the Hon. Secretary and Secretary of the Society, together with Sir George Riddell and Mr. E. J. Naldrett, Barrister-at-Law (Hon. Members), and Mr. A. Montefiore Brice, Barrister-at-Law, and the Hon. Solicitor, Mr. T. Baines. An adequate sum has been earmarked to form the nucleus of a defence fund, for use when necessary in forwarding the objects of professional defence. This is a very important extension of the work of the Society, and one which it is anticipated will be of great practical value to the members. Cases submitted to the Secretary will be brought before the Board, who will advise the Council on the merits, and if the interests involved are of such importance to the profession generally as to warrant any action being taken by the Society as a corporate body, the Board will further advise the Council as to what course to follow. The scope of the Board will be confined to dealing with matters involving questions of principle affecting the general body of members, and therefore of the profession as a whole. The Council draw attention to the decision of Mr. Justice Channell in *Crittall Manufacturing Co. v. L.C.C.*, which was an action by a sub-contractor to recover against his clients failing payment by the builder. It would seem desirable that in future architects should obtain a written undertaking from the sub-contractor that he will not look to the client or the architect for payment.

Membership.—The present total membership is 1,214, being made up of 31 hon. members, 16 retired members, 931 members, and 236 students. A proposal for the development of the membership referred to in the Council's last report has now materialised by the adoption of a scheme for grading the membership on the following lines, having in view the time when examination will be the only test of qualification for admittance to the Society, viz., students, graduates, and members.

Professional Ethics.—The matter of the proposed code of professional ethics has since been before the Council, and suggestions for a set of regulations have been drawn up by them and distributed to the members for their consideration. There appears to be considerable difference of opinion on the matter, both as to the necessity or desirability in principle of endeavouring to codify regulations of this kind, and as to what form a code, if drafted, should take. The Council, after prolonged consideration, have decided to embody and publish in due course the results of the many valuable expressions of opinion and suggestions made by members, in the form of a schedule of guidance on the main points governing professional etiquette in the practice of architecture, and in the meantime to take powers under the articles of association to deal with any alleged breach of professional etiquette affecting members which may be brought to their notice. By so doing the Council will be free to adjudicate upon any case on its merits, and able to administer whatever penalty (if any) the offence may in their opinion call for, without being subject to the limitations which a written code might be held to exercise upon them when acting in a judicial capacity.

Architectural Education.—The Council have had under consideration a proposal for introducing into England a system of education on similar lines to the ateliers of the Ecole des Beaux-Arts, in Paris. The Council being of opinion that it is desirable to extend this system in England have appointed a committee to confer with educationalists on the subject and report in due course.

FIRE TESTS OF THE BRITISH FIRE PREVENTION COMMITTEE.

The British Fire Prevention Committee on Wednesday conducted a further series of fire tests in respect of roofing materials, the coverings under investigation being corrugated sheets of asbestos-cement made in Canada, and produced in such a manner that they can be applied in the same way as the well-known corrugated iron sheets, whilst having great advantages as to non-conductivity against heat and fire.

It will be realised that these tests were of particular importance to our Indian and Colonial authorities, as the difficulty of finding suitable materials to meet the climatic conditions has always been great.

Mr. Edwin O. Sachs, F.R.S.Ed. (Chairman of the Executive), Major O'Meara, C.M.G. (General Post Office),

Mr. Horace S. Folker, F.A.I. (Hon. Treasurer), Mr. Percy Collins, F.S.S., and other members of Council received the members and visitors attending at the committee's Regent Park Testing Station, and the operations were conducted by a strong sub-committee under the direction of Mr. C. T. Cuss and Mr. Ellis Marsland (District Surveyor).

The roofing material under test was tested at different angles, fire being supplied in different forms, such as bonfires, fire brands, &c., and certain of the roofs were also subjected to water from a steam fire engine when they were in a heated condition.

The visitors, as usual, comprised representatives of the principal Government Departments concerned, including the War Office, H.M. Office of Works, Home Office, Admiralty, &c., but on this occasion also the representatives of the various Colonial Government Agencies, &c., were present, and there was also a considerable attendance of insurance surveyors, engineers of railway companies, and fire brigade officers.

As to the results of the tests, these will be issued in about six weeks in the usual illustrated report, and will be known as Red Book No. 168.

COMPETITION NEWS.

PLYMOUTH.—The Education Committee at their last meeting agreed that plans for the proposed rebuilding of the Public School at an estimated cost of £13,370 should be obtained through a competition limited to architects practising in the town. The President of the R.I.B.A. will be invited to nominate an assessor.

ILLUSTRATIONS.

COMPETITION DESIGN FOR NEW HEAD OFFICES, PORT OF LONDON AUTHORITY.

This design was submitted in the first stage of the competition by Messrs. Macintosh, Cole & Newman.

A CHURCH INSTITUTE IN JERSEY.

This building (proposed to be erected at St. Brelade's, Jersey) is to be built from the designs of Messrs. Rogers, Bone & Coles, with Jersey granite, which has so many charming varieties in colour and texture. The site is a difficult one, being on a somewhat steep slope, and the road from which it will be entered is on a higher level. The accommodation is to consist of hall, committee room, gymnasium, dressing-room, &c. The hall and committee room are to be suitable for use for Sunday School purposes.

HOUSE AT BUDLEIGH SALTERTON.

The drawing shows an attempt to give some interest to the treatment of an internal angle of a house of simple design, erected at Budleigh Salterton for Commander Brant, R.N. The short columns, cill, and lintels are of Douling stone. The builder is Mr. J. C. Palmer, of Budleigh Salterton, and the architects Messrs. Rogers, Bone & Coles.

SEDILIA IN CHURCH OF ST. MARY THE VIRGIN, STAINDROP.

The church of St. Mary the Virgin, Staindrop, is in many ways one of the most interesting ecclesiastical edifices in the county Durham. It consists now of chancel, with vestry on the north side and *domus inclusa*, nave with north and south aisles, and north transept, south porch, and engaged western tower. The sedilia are the only feature distinctly characteristic of the period of the alterations in the fourteenth century. They are three in number. The head of each is a richly-moulded trefoil arch. The arches rest at the extremities of the range on filleted nook shafts, and midway on carved corbels. Over both shafts and corbels are capitals, all of which, except one nearest the west, which is moulded, are richly carved with fully developed Early English foliage. The corbel nearest the west consists of foliage, whilst that to the east is a priest's head, possibly that of a cleric who was rector of Staindrop when the work was executed. These, which are by far the finest sedilia remaining in the county, recall very forcibly the wall arcading of the Nine Altars Chapel in Durham Cathedral, and indeed may safely be attributed to one who, if he had not actually been engaged upon, was, at least, intimately familiar with that work. The drawing by "Alpha," which we reproduce, was awarded a prize in the monthly competitions of *The Architect Students' Sketching and Measuring Club*.

T. 18, 1912.

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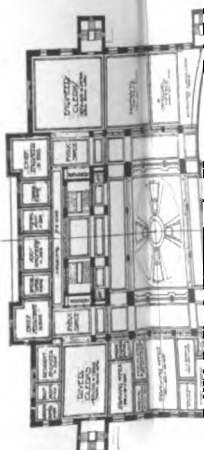
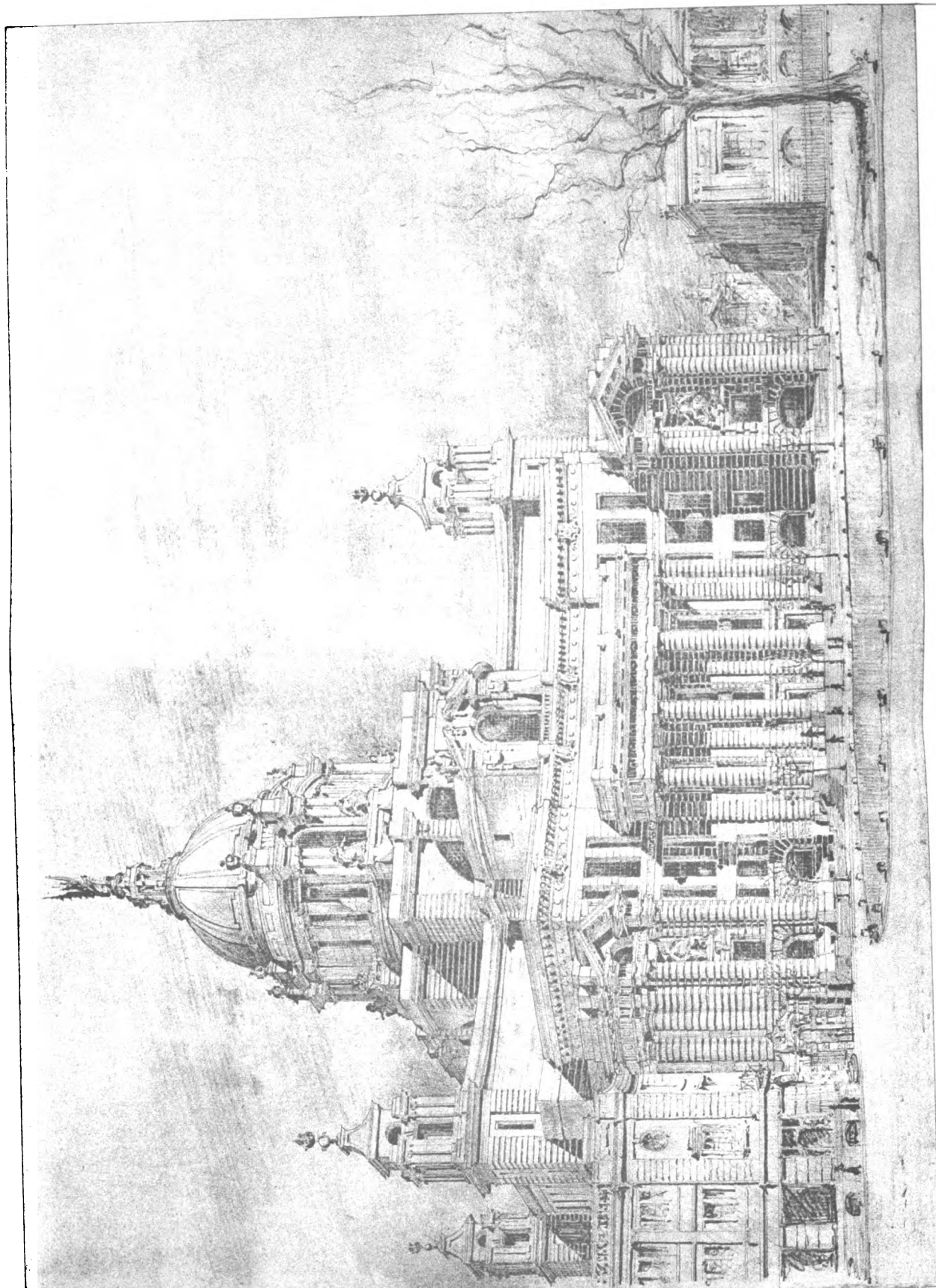
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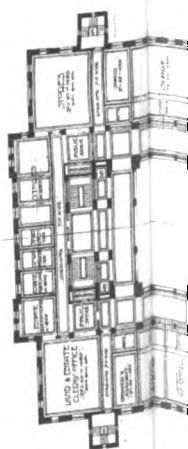
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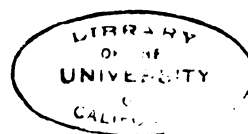


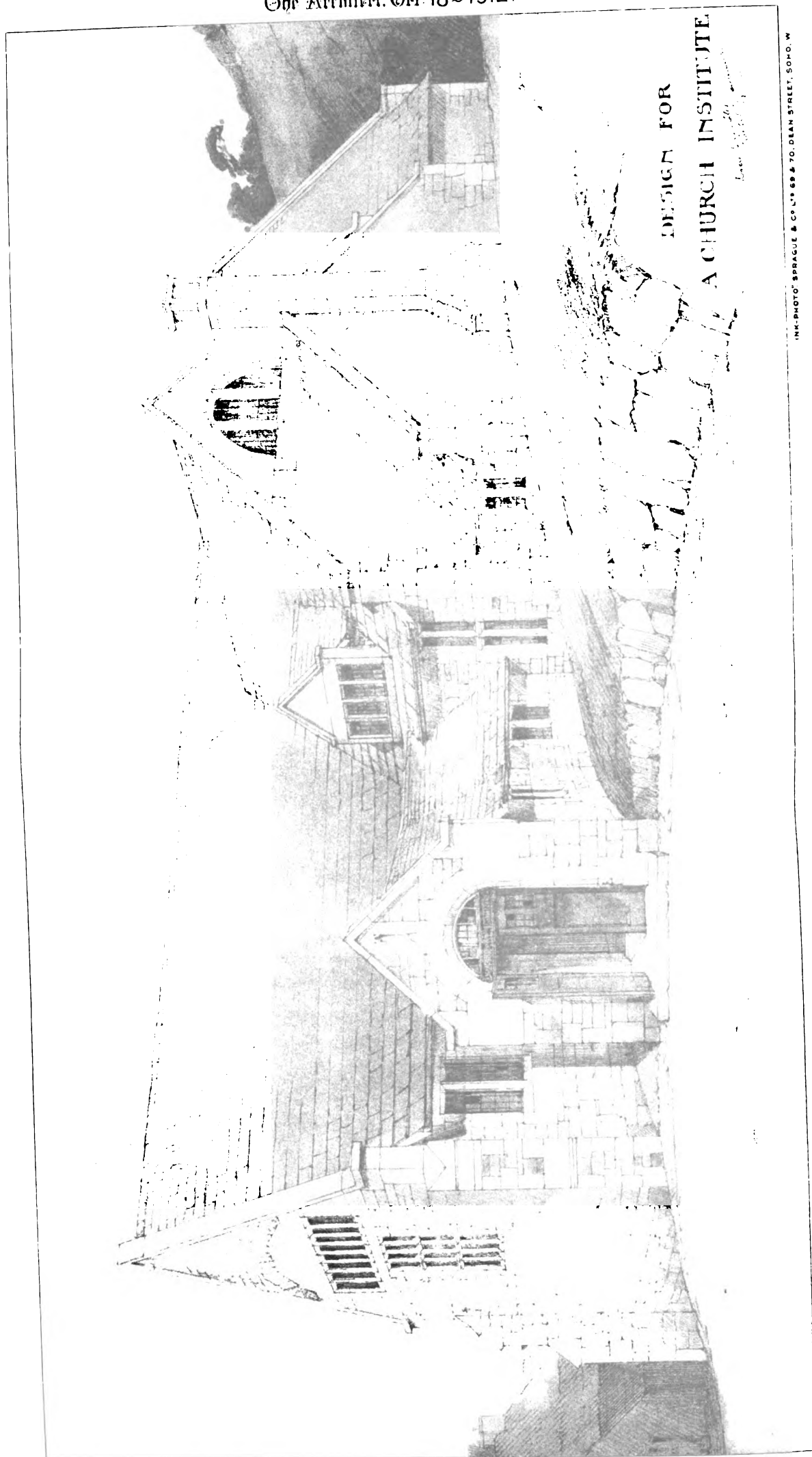
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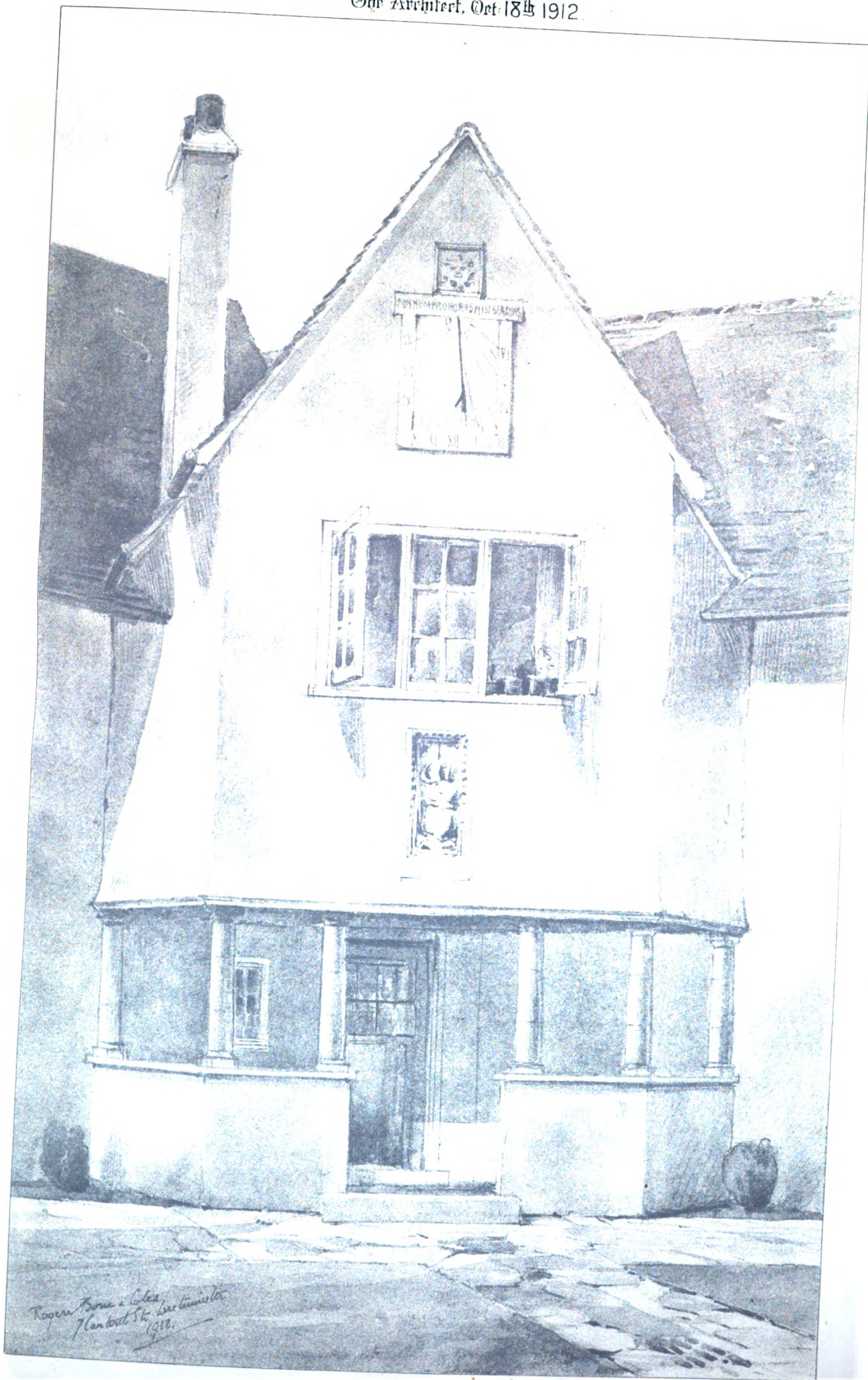




DESIGN FOR
A CHURCH INSTITUTE

A CHURCH INSTITUTE IN JERSEY.
Messrs. ROGERS, BONE & COLES, Architects.

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HOUSE AT BUDLEIGH SALTERTON: SOUTH GABLE.

Messrs. ROGERS, BONE & COLES, Architects.

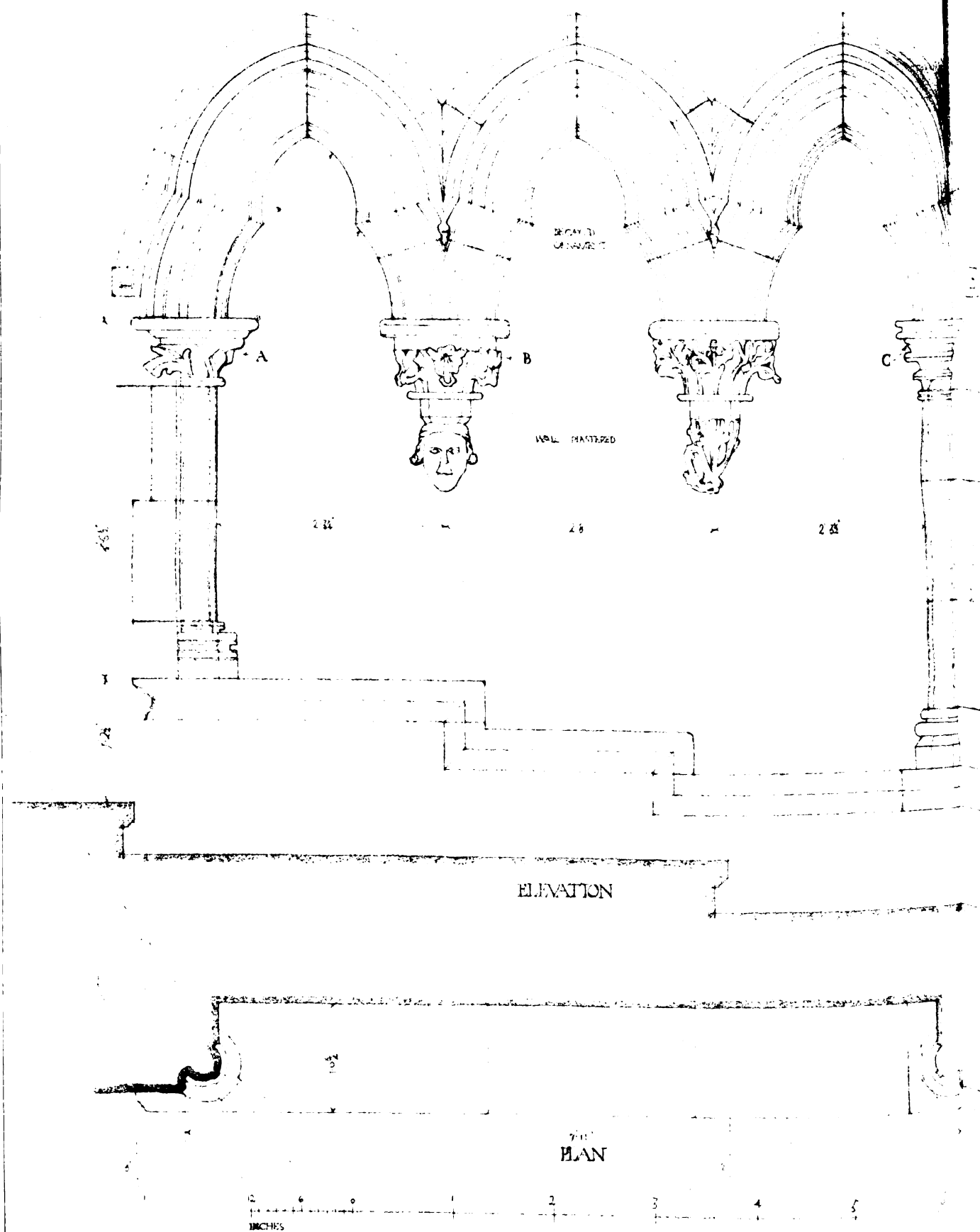
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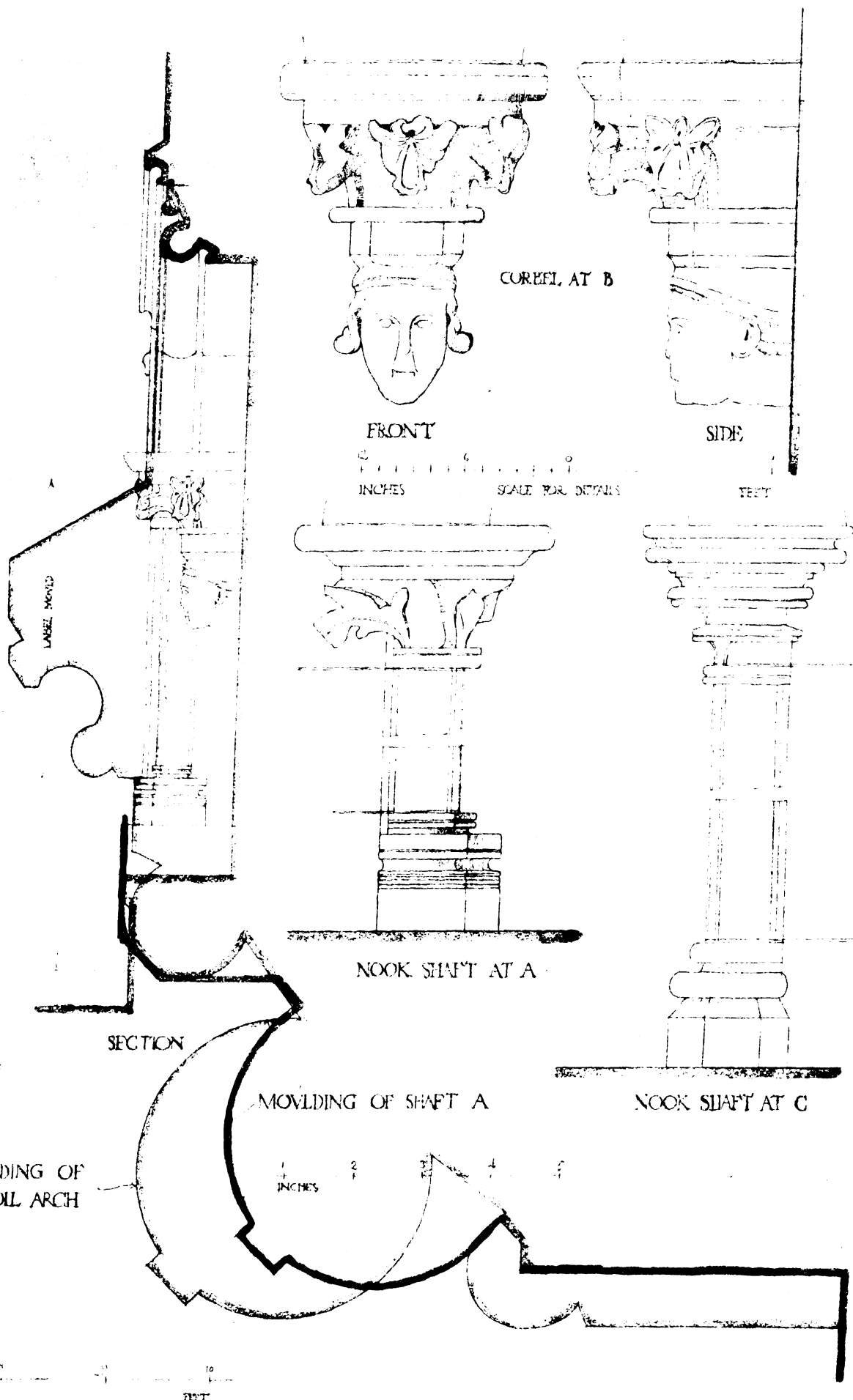




THE CHURCH OF S. MARY THE VIRGIN · STAINDROP · DURHAM · SEDLIA · MEASURED & DRAWN BY 'ALPHA' MARCH 1912



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"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

WE regret that we have not received a larger number of contributions for last month's subject. There is much to be learnt from the study of old cottages and farmhouses. Although it may be true that many of these are void of architectural merit and are merely shelters, yet it is beyond question that there are plenty still remaining in all parts of our own country, and also on the Continent, which present valuable object lessons. We may learn from these that detail and ornament are not an essential in architectural design; that beautiful buildings may be erected without adopting the grand manner.

Simplicity of treatment, picturesqueness of grouping, and the unaffected use of material are characteristics of good cottage and farmhouse architecture, and are valuable qualities for an architect to develop. Care must, of course, be taken, when we are attracted by a pretty cottage, to distinguish between the adventitious elements of age and environment, which often make up no inconsiderable part of the attractiveness, and those more solid and artistic qualities which are part of architecture.

"Alpha" has sketched a red brick cottage at Pathhead, near Stella, county Durham. The house is roofed partly with pantiles, partly with stone slates, and is picturesquely grouped. The drawing is well composed, but the values are not happily expressed, and there is a tendency to depend on the modern fashionable refuge of the destitute, the thick line, for expression of masses. There are no lines in nature but only surfaces of varied tone, and the thick mass line in perspective drawing is a mere trick devoid of all logical or reasonable excuse.

Mr. Charles S. Carter sends a sketch of a charmingly picturesque cottage at Pulborough, Sussex, which, in its grouping and combination of brick, half-timber and plaster, and hung tiling with tile roof, the whole set up on a rough stone retaining wall, is an admirable piece of simple and effective architectural design. The drawing is a brilliant piece of pen and ink work.

"Avec beaucoup de Peur" has given us a boldly drawn sketch of a cottage at Brimscombe, Surrey, which is a capital example of grouping and an illustration of our remark that detail is not an essential in architectural design. The thick mass line shows a tendency to creep in, but the general calibre of the drawing prevents it from being too obtrusive.

Mr. Charles H. Roberts has found a fifteenth century half-timber cottage at Wimborne, which, with a gable towards the street, is a good piece of design as well as an antique, and is expressively drawn without affectation.

Although the drawings sent do not all excel in the same direction, we consider that on a just balance of merits and defects they are practically equal, and we have decided to award a prize of half a guinea to each.

THE ARCHITECTURAL ASSOCIATION.

THE annual general meeting of the Architectural Association was held at their premises at 18 Tufton Street, Westminster, W., on Monday, October 14. The chair was taken by Mr. Gerald C. Horsley, F.R.I.B.A., the President.

Mr. Herbert A. Hall, Hon. Secretary, read the names of forty-three candidates for membership. He also announced that the next meeting of the Camera, Sketch, and Debate Club will be held on October 24, at 8 p.m., when a paper entitled "Craftsmanship and Architecture" will be read by Mr. L. M. Philipps.

The President proposed a vote of thanks to Mr. Edwin Gunn for presenting a collection of about 200 interesting negatives of architectural subjects to the Association. He also announced that the Hon. Librarianship is vacant, and that there is one vacancy on the Council. Nominations for same may be made at the next meeting.

Prize List.

Mr. Gerald C. Horsley next distributed the prizes and medals gained during session 1911-12 by the following students:—Mr. R. M. Pigott, A.A. silver medal; Mr. V. O. Rees, Banister Fletcher Bursary; Mr. W. J. Palmer Jones, Architectural Union Company's prize; Mr. H. J. Higgs, Class of Design prize and bronze medal; Mr. W. G. Newton, A.A. essay prize and silver medal; Mr. W. S. George,

Herbert Batsford prize; A.A. Travelling Studentship, first prize, not awarded; Mr. B. W. Ridley, second prize, A.A. Travelling Studentship; Mr. M. T. Waterhouse, history, first year, Day School (equal with A. S. Furner in studio prize, first year Day School); Mr. A. S. Furner, construction and free hand drawing (first year, Day School) (equal with M. T. Waterhouse in studio prize); Mr. H. J. H. Dicksee, Travelling Studentship (second year, Day School); Mr. H. G. Satchell, special prize given by headmaster (second year, Day School); Mr. E. C. Davies, end of session test, second year (prize given by the President); Mr. H. A. N. Medd, book prize, first year, Evening School; Mr. F. W. Mackenzie, second prize, first year, Evening School; Mr. J. B. M. Walch, scholarship, second year (first place in materials, first place in history); Mr. E. K. Smith, book prize, second year, Evening School; Mr. D. J. Gordon and Mr. T. W. Dowsett, equal, third year, Evening School prize; Mr. A. T. Hardman, Travelling Studentship, fourth year, Evening School; Mr. T. F. Ford, second prize, fourth year, Evening School, first place in history; Mr. T. F. H. White, first place in history. The following students have been awarded the Association's two years' course certificate:—Messrs. E. C. Davies, H. J. H. Dicksee, J. S. Hodges, H. G. Satchell, H. G. Tebbutt, R. S. Wallace, W. W. Locke, A. F. Hooper.

Mr. G. C. Horsley then delivered the following presidential address

On the Training Afforded by the Architectural Association and its Value in Promoting the Progress of Knowledge in Architecture.

Ladies and Gentlemen,—On rising to address you, as is the custom of Presidents at the opening meetings of the sessions, I feel I should offer you some sort of apology for troubling you again in this capacity. Your suffrages, as I believe they are called, have placed me in the position of your President for a second year, so I may fairly claim that you are yourselves responsible; but I, too, am not quite guiltless, for when I was asked if I would serve again I did not say no. I can only hope that the experience gained in my first year of office may help me in my second, so that you may not be too badly disappointed. To us all the business of the Association is of paramount importance. Last year in my address I traced, in some detail, the progressive work of the Association from its early days, when its membership consisted of its founders, through the many years of voluntary work and effort in its schools and classes, up to the formation some time ago of its School of Architecture and its present membership of something about 1,700.

Founded over sixty years ago by a few earnest men to fill a blank in their artistic lives, our society has consistently advanced along the path of progress and development. It began as a society founded by architects for architects, to assist them in acquiring a fuller and more complete knowledge of their art, and it is still, I am thankful to say, managed by architects for the same most excellent object.

This evening I will, with your permission, turn to a development in its work which the Council and those most interested in it believe to be one of no little importance. This is the institution of a third year in the Day School course in the School of Architecture. Hitherto, as you all know, the two years spent in the Day School have been chiefly of use to the student as an admirable introduction to the art of architecture. They prepared the way for the more advanced study in the Evening School in the third and fourth years, where much excellent work has been done. In the future the first two years will still fulfil these preparatory functions, and in those cases where a student cannot attend a third year in the Day School he will be able, as heretofore, to complete his course and obtain his certificate in the Evening School in the fourth year. But to those students who take advantage of the new institution I believe that time will prove it to be of great benefit. First, because, if good workers, they will be able to obtain their certificates in three years instead of in four; and, secondly, because they will be far better equipped for the work which will fall to their share on entering, as pupils or assistants, an architect's office. Here we come to a very important reason for the institution of this new régime. The complaint has been not infrequently made in the past that the two years' course was not a period of sufficient length to properly equip a man for work in an office; to meet this complaint the third year has been instituted.

Under the able direction of Mr. Robert Atkinson the all-important subject of design will be carefully studied, and it is the firm opinion of the Council that the prolongation

of the probationary period must prove to be of the utmost advantage to our Day School students.

In common with every member I should deeply deplore this development if I felt it would have any deterrent effect upon the custom of entering an office as an articulated pupil after the course has been completed and the certificate obtained. I do not believe that it will have this effect. We have made the Day School course a longer one in order that the student may be better fitted to enter an architect's office. This development was, in my opinion, quite inevitable. In view of the careful preparation for his future with which it is now necessary to provide the architectural student the period of study must be lengthened. In common, then, with the Council and with the Advisory Council, who have been consulted upon this important step, we may all look forward with confidence and interest to its success; all the more so because still further development is closely connected with this three years' course. This is that the student should enter the Royal Academy School for training upon its termination and during the time he is at work in an architect's office. The authorities of the Royal Academy have agreed to admit to their School without the usual examination, except in the subject of design, any of our students who have obtained their certificates after the Day School course. Thus, by the training given in this building, supplemented by the teaching at the Royal Academy, we shall have a continuous scheme of architectural education of the best and most interesting kind. It may be urged by some of our members and supporters, "But why this combination with the Royal Academy School? Why does not the Association undertake this advanced training itself?" Well, the reply to this is, that in advising our certificated students to enter the Schools of the Royal Academy for the completion of their studies we are availing ourselves of the successful educational organisation of that distinguished body. We are advising them not only to enter a school whose traditions and work are of the very best, but a school situated in a milieu essentially and vitally artistic. To master the principles of his craft in a congenial atmosphere is, for the student, a matter of the first importance. The artistic vitality, so well known to those who have passed through the course of teaching at the Royal Academy, is probably partly owing to the excellent system whereby most of the instruction is given by architect members, who act as visitors to the classes in rotation; and partly to the broadening influence of fellowship with young sculptors and painters, an association which frequently leads to friendships of lifelong, and also of professional, value, and tends to the formation of what I may call artistic character.

There will, of course, be in our own Evening School advanced training of a very thorough and carefully-prepared type. The Evening School has always been a great feature in our work, and it is to be continued and much improved. In it lectures will be given, which will be of use to all who are preparing for the Final Examination of the Royal Institute of British Architects. The work will be of an advanced description, but it will be more adapted for those who are only able to spend two years in the Day School and for those who are only in London for a comparatively short time.

Turning again to the advantages offered to a student by the Royal Academy, I must point out that the prizes which can be gained for good work are of great value. The principal of them is, of course, the Gold Medal and Travelling Studentship for one year's study abroad, of the value of £200, which is offered for competition every two years. Ever since its institution this prize has deservedly been the "blue ribbon" of the student's career.

It is gratifying to read in the annual report of the Council for the last session, on page 216 of the new Brown Book, that last year the following prizes were won by our members at the Royal Academy School—viz., the gold medal and travelling studentship (£200), by Mr. Alan Binning; set of architectural drawings (first prize, silver medal), W. L. Clark; an architectural design (prize £20 and silver medal), J. M. Whitelaw; set of drawings of an architectural design (first prize £15 and silver medal), V. O. Rees; second prize (£10) and bronze medal, Cyril A. Farey. As this list includes nearly all the prizes open to architectural students in the Royal Academy, you will, I am sure, join with me in heartily congratulating these successful competitors, and agree with me in thinking that it is apparent our School of Architecture has already made up its mind as to how it is intending to deal with this matter.

But I should like to remind you here that the provision for the equipment of our architects of the future is not yet

finished. As you all know, the foundation of studentships at the School at Rome is now an accomplished fact. No doubt the number of studentships compared with the number of competitors will be few, but, nevertheless, the institution of this important competition will tend to make our whole scheme of architectural education in this country more thorough. For although all competitors cannot be winners of prizes, all may be inspired to do good work.

I should also like to mention that, in order to increase the efficient working of our educational system, we have created a new post—viz., that of the Registrar. The Registrar may be called the Secretary of the School, and I believe that Mr. Scott-Homes, who has been appointed to fill this position, brings to it just those qualities which are desired. I am glad, on this the first public occasion since the appointment has been made, to give Mr. Scott-Homes a very hearty welcome on behalf of the Association. We have also in the last few months made some alterations in our building, which, we hope, will add to the comfort of our members. I refer particularly to the new members' room on the first floor and the redecoration of our meeting-room.

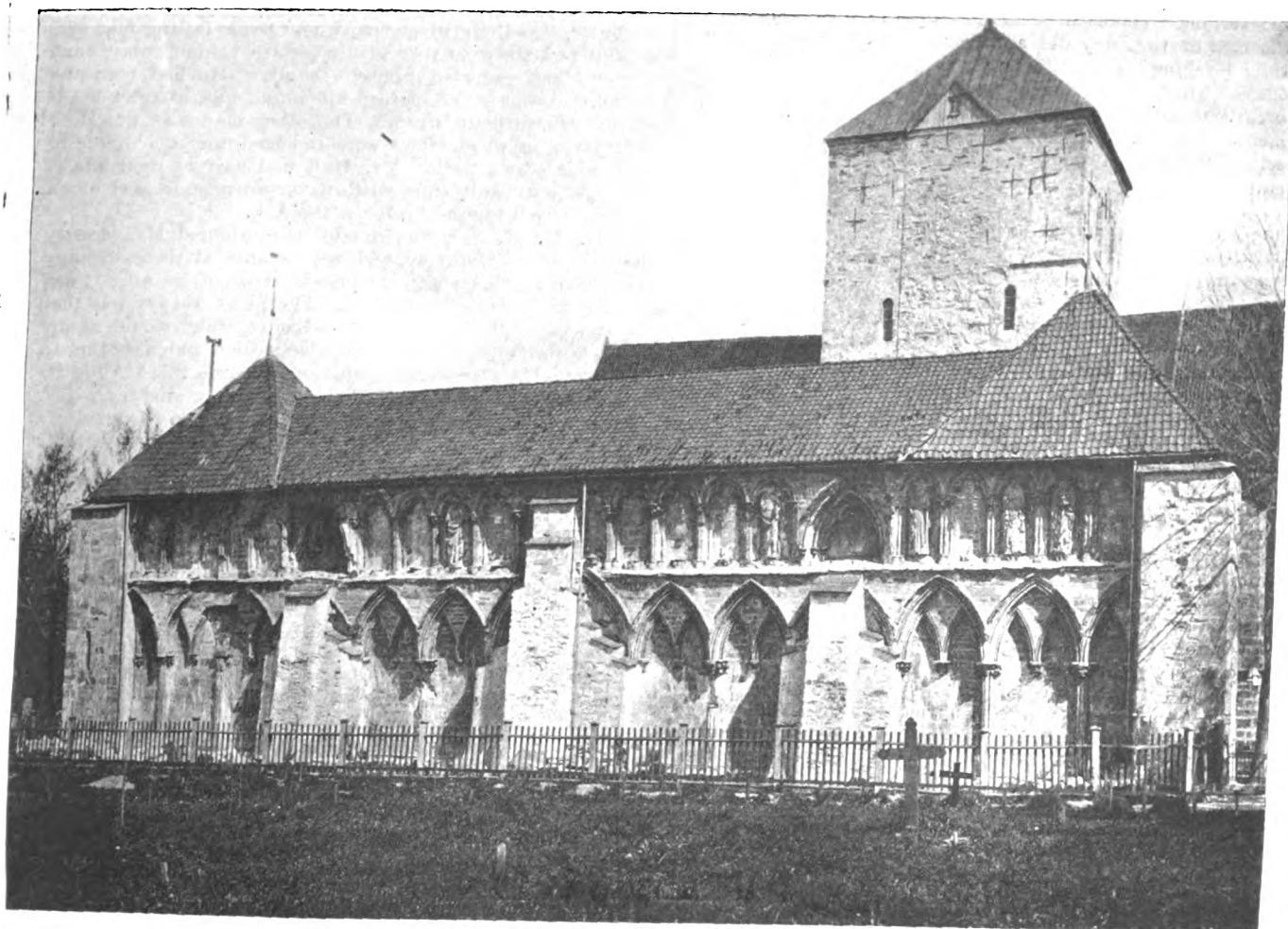
I regret that time will not permit me to speak to-night in any detailed manner of the many interests of the Association; for instance, of the meetings, the excursions abroad and at home, the "Sketch-Book," the Camera, Sketch, and Debate Club, the Athletic Club, and others. I must refer you to the "Brown Book" for information about these. I will merely remark that we are looking forward to a year of much activity in all these matters.

But I will call your attention to two events which are recent and of interest to us all. The first is the appointment of our new Secretary, Mr. Yerbury. The Council and those members of the Association who know Mr. Yerbury and the hard and good work he has done for the A.A. in past years view this appointment with satisfaction. I feel, I may say, that he has the best wishes not only of our own members but of the profession in general on his new appointment.

The second event to which I wish to draw your attention is important not only to some of our younger members, but to the many assistants and workers whom we find in architects' offices throughout the country. I allude to the new Insurance Society which has been formed under the National Health Insurance Act, and which is called the Architects' and Surveyors' Approved Society. This Society has been created under the auspices of our Association in conjunction with the Royal Institute of British Architects, the Surveyors' Institution, and the Society of Architects. It has made a most excellent start, for a large number of members have been enrolled already. It is not only appropriate that under the new conditions imposed by this Act of Parliament those working in our profession and in the profession of the surveyors and who come directly under these conditions should have a society of their own, but also that the formation of this society should have originated with the A.A., for in our ranks a large proportion of the future members will be found. Of course, most of these members will only remain under the Act for a short time, but their contributions during that period will allow for a gradual accumulation of necessary funds, which will permit of the granting of useful benefits to those who may require them.

For the formation of this new society our thanks are due to several of our members and to our Secretary, Mr. Yerbury. All these gentlemen have given generously of their time and have worked hard during the last few months to ensure the success of the new society; and it must be gratifying to them to see the successful beginning which has been made. For the present the office of the society is in this building, and Mr. Yerbury has superintended the initial work. A general meeting of the society will shortly be held, when doubtless further arrangements made necessary by its growth and expansion will be discussed.

In considering the progress which the Association has made during the past year we cannot but pause for a moment to remember the sad loss which we suffered so very suddenly last autumn. I mean in the death of Mr. D. G. Driver, who for so many years had worked with so much energy and enthusiasm in the interests of our society as its Secretary. It will, I am sure, be of interest to you all to know that the kind response to the appeal issued by our Hon. Treasurer has enabled our trustees to come forward and make such arrangements as will best help Mr. Driver's widow and young children. In the death also a few months ago of Mr. T. M. Rickman, F.S.A., we have lost our senior member and past-President. Mr. Rickman was elected a member of the A.A. in the year 1852. He was therefore one of its



THRONHJELM CATHEDRAL.—WEST FRONT.

founders, and was President in the year 1854-55. To the last he took the utmost interest in the doings of the A.A., and only last year I had a letter from him in which he regretted his inability through illness to attend the first meeting of the session.

My reason for devoting, however inadequately, this paper chiefly to the work in the School of Architecture is twofold—first, to point out the new development of our system; secondly, to remind ourselves of the real purpose underlying all our efforts—namely, to help forward the course of our art, and to hand on the torch, as M. Gaudet has said, to our successors.

In my address last year I emphasised the necessity of our education being based upon the principle that art is unity; in the words of Alfred Stevens, "I know but one art." I referred also to the wise provision made many years ago in France by the great Minister Colbert for the education of the artists of his country in Paris and in Rome. I ventured to state that it was this very thorough system of training which helped Labrousse to build his library of Ste. Geneviève in Paris and his notable additions to the Bibliothèque Nationale, which helped Duban in his building at the Beaux-Arts and Duc at the Palais de Justice.

I think we may claim for the continuous course of training, including the advanced course at the Royal Academy which the Association has now adopted and which I have described to you this evening, that not only is it founded on the principle of the unity of art, but that, through its conjunction with the opportunity for further study offered by the British School at Rome, we are instituting a "very thorough system of training" in this country.

The opportunities for architectural work in the future promise to be many. Cities will be rebuilt, and new cities, at home and abroad, will be needed. It seems to me that no thought can be more inspiring to a young architect than that of adding to the beauty and nobility of our Empire and to the health and happiness of its inhabitants. The study necessary to make us fit to take our proper part in this endeavour is so wide, so illuminating and interesting, and the aim of it is so high, that we may well believe our profes-

sion to be of the noblest—one of those to which a man is proud to belong. To it we must bring the best accomplishment, the best work that is in us, all our imagination, all our vitality, and a genuine enthusiasm.

Mr. Paul Waterhouse, in proposing a vote of thanks, said he would like to congratulate the Architectural Association not only on having secured from Mr. Horsley another year of office, but also to congratulate Mr. Horsley himself on the very interesting address which he had just given them. Mr. Horsley was a man of very wide architectural sympathies, and he might have been tempted to give them a discourse on the wider issues of architecture; but with great restraint he had brought himself within the compass of the Association. Having last year dealt with the past of the A.A., Mr. Horsley had this year dealt with its future. Education, like other processes of manufacture, is more or less a secret process—i.e., outsiders do not take a sufficient interest in it to be aware of what is going on. Neither teachers nor taught think it worth while to write about what they are doing any more than farmers or cooks talk about the excellent work they are doing. The taught, like the eaters, never seem to think it a remarkable thing that they are growing visibly. It is astonishing how few people do give any attention to what is going on educationally. As external examiner to the A.A. he enjoyed an opportunity to gain a bird's-eye view of what was happening there. He had to admit that it had been a revelation to him as to what could be done in the course of three or four years. This was especially noticeable by comparing the work of a man at the beginning and at the end of his course. He considered that the work was very ably done and showed great sympathy between the teachers and the taught. Everyone had been told that it was impossible to make a silk purse out of a sow's ear; but he believed that in the A.A. classrooms they would make a very good substitute for one. However, he understood that there was some special machinery for conveying to an unlikely student the knowledge that his talents might shine better elsewhere. He sincerely hoped that pupilage, or some substitute for it, would never be entirely abolished. In this connection it might be worth while to remind the younger

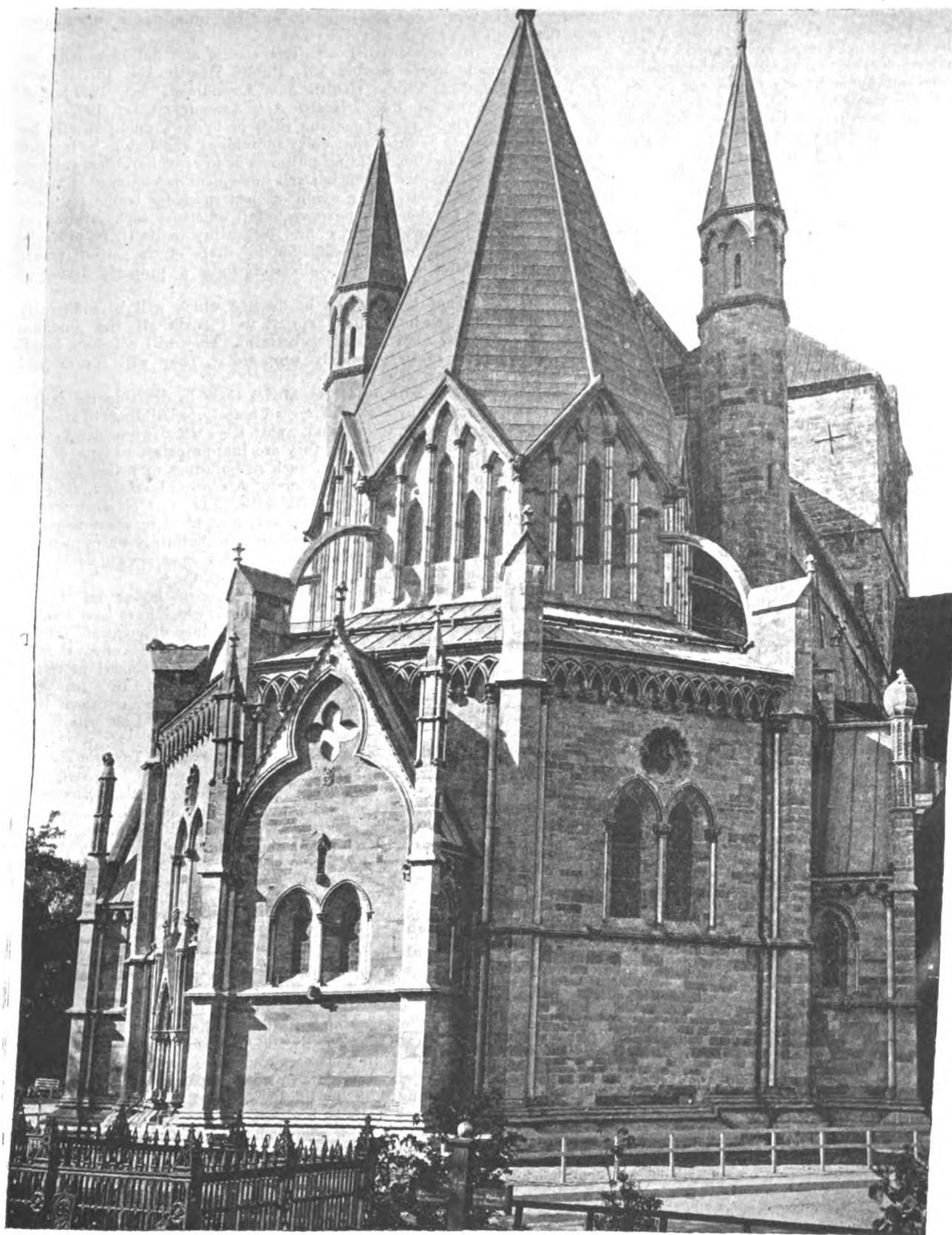
generation present of what the generation behind the speaker did. There can be no immodesty in pointing out that the men of that day did a rather fine thing. Up to that time teaching in architecture was practically confined to offices, which fact brought, of course, some grist to the architectural mill, though not every pupil was a good investment. But the architects of that generation said to themselves, "We must not let any consideration of that kind stand in the way. The thing is that the young men of the future must be educated in the best possible way." Accordingly they boldly set going what has now become a serious rival to the old-fashioned pupilage. The important thing was that besides an excellent academic education there should be some arrangement by which a young architect should still come into close touch with the architect whom he may regard as his father in art. Mr. Horsley had alluded to their loss in the death of Mr. Driver; he (the speaker) for many long years personally experienced the energetic work which Mr. Driver had done there. Mr. Horsley had also alluded to the late Mr. Rickman. To many of those present Mr. Rickman would be unknown; to others he would only be known as a quantity surveyor. He might say that Mr. Rickman was almost the father of quantity surveying, for he had very largely to invent the profession. To him personally Mr. Rickman was a very old friend, and he knew him to be a very kindly, scholarly, and interesting man. Mr. Rickman possessed a fine library of books, of which he had more than a superficial knowledge, and he was ever ready to lend them. Mr. Rickman had once remarked that if ever a man was born with a pair of silver dividers in his mouth it was himself. With regard to the prize-winners of the A.A., he might mention that while in the course of years he had had to read through an enormous number of essays for the R.I.B.A., he had very seldom read one up to the level of that which received their Essay prize. The future seemed to be a very bright one for architects. Various aspects of it had been pointed out by Mr. Horsley. He hoped that in the future the A.A. student would make a very great mark.

Mr. Curtis Green, in seconding the vote of thanks, said that they all looked forward to that particular meeting more than to any other, and he wondered whether it would not be better to hold it at the end of the session when they had earned it, rather than with their work lying all before them. They might then on the wave of enthusiasm caused by the address enlist the services of men like the proposer of the vote of thanks for the coming session. The Association wanted men preoccupied with architecture as a living thing. The latter often said their art unfitted them for routine affairs; but he felt sure the Architectural Association will do this art as much good as they will do the A.A. For, after all, architecture is concerned with the facts of life. The President's address usually fell into two headings: the activities of the Association and the source of inspiration or driving power of the student of architecture. Important as were their domestic affairs, that which interested most was the force behind them. This year the President gave a full account of the new third-year course in the Day School, and of the bond between this school and that of the Royal Academy. Educational matters move so slowly that the more they could unite and concentrate their efforts, the further they would advance. The little rivalries between the schools are doubtless but healthy signs of keenness, and yet he confessed to a hope that they might see one great school of architecture for London. Under Mr. Maule's guidance their own school had for a long time been the most considerable school of architecture in the country, and the third year's course will still further strengthen it. The men that are passing on out of the school are also a source of strength to it. It is perhaps as well that it is only as they further advanced that they realised the nature of their adventure. Material things press, efficiency and technique are hard to acquire, examinations overshadow. Yet those who look for and learn only the facts and formulæ likely to be useful in examinations, or in professional practice, though they may advance themselves, will hardly forward the architecture of their time. It is not the fashion just now for young men to dream dreams, or old men to see visions; nevertheless, it is the imaginative outlook that matters more than all else. Emerson says somewhere that the most surprising thing about a work of genius is that we recognise in it our own rejected thoughts; they come back to us with a certain alienated majesty; and he says that we must learn to detect and watch that gleam of light which flashes across our minds and not dismiss it because it is our own.. In

conclusion, he would refer to the debt that the Association owed to two of its members during the past year. The first, of course, was their President, whose never failing tact and engaging courtesy together with a certain valuable wait-a-bit wisdom, has endeared himself to all. He had been the polished corner-stone against which the unwary and headstrong run without injury. The other man was the Hon. Secretary, to whom they were indebted for an unusually strenuous year's work. Mr. Hall had carried their affairs through a difficult time with a certainty and ease which promised well for the future of the A.A.

Mr. W. H. Seth-Smith said he considered Mr. Horsley had given an inspiring address, because if there was any failure or inefficiency in the present mode of training it was in the higher branches of it. They had always felt that what was wanted was an advanced course which would, at any rate, approximate to the admirable system which obtains in France. They could therefore congratulate the A.A. on its policy and on removing what has been a distinctly just criticism. Within the year they had had two new departures: the first was connected with the Association, and the other was the British School at Rome, which gives promise to be equivalent to the great French Prix de Rome. He shared the hope that the approaching connection with the Royal Academy Schools will also supply a real need. They had every reason to hope that the third year A.A. course in the Day School will prepare men for making the best use of that great opportunity in the Academy Schools. He could not help feeling with regard to the Association and its classes that wherever students can see their way to continue in the Evening Schools it would be a great help to them. It was almost invariably dangerous to swap horses in crossing a stream. Mr. Horsley had opened up a vista of the possibilities lying before the younger members of the architectural profession. If ever a man is to be inspired he must be inspired with enthusiasm when he finds not only private clients commanding his services, but that, if he has abilities, he may even dream of designing new cities. We have at the present moment three new cities in prospect—viz., the Canadian project, the city of Delhi, and the Australian capital. No doubt there will be others also. The great question to be thought of is, "What is to be the principle to govern the design of these cities?" A great many of those present might have seen the very interesting letters in the *Times* which have attempted to solve that question. Lord Curzon and others think that nothing would be more applicable than our prevailing types of Renaissance. But the letter which was of the most interest and which appeared to sum up the situation was from Mr. T. G. Jackson. Mr. Jackson said:—"We should study works of art not to copy them, but to be impregnated with their principles; and if our study has done its work we should be so saturated with the true principles not of this or that particular style, but that of architecture itself, which is a very different matter, as to be ready for any novel conditions that may present themselves. Such conditions no doubt do present themselves at Delhi, and there could be no more splendid opportunity for a sensible development of architecture. The first considerations should be purely utilitarian: what sort of construction is demanded by the climate, the social habits of the inmates, and the functions the buildings are to fulfil. To think first of the style and try to bend and warp an old one to suit the case, is to begin at the wrong end, and will only ensure another of the many disastrous architectural failures of which India has been the field. The very difficulties that present themselves in the way of using a ready-made style should be regarded as the most fruitful source of inspiration for good design. That the forms should to a certain extent regard precedent is, of course, inevitable; we cannot forget the past, but they must not be fettered by any conventional formula. Whether they will be beautiful or not will depend solely on whether the architect is a true artist or merely an engineer. For the artist only differs from other men in this—that he does gracefully and beautifully the same things that the inartistic man would do, usefully perhaps, but unattractively." Some of those words might be written in letters of gold on the friezes of the A.A. studios. They summed up the principles which were the governing principles in their College of Art. It was seen that by adopting the right principles it was possible to attain the most satisfactory results. They could only hope that that would also be the case in the history of their Empire.

Mr. Walter Cave remarked that he had been extremely interested in the announcement concerning the Royal Academy Schools. Those present might not know that as



being done at Tufton Street. But a matter he always felt very jealous of was lest the classes should become so all-important as to destroy the other valuable influences. Personally he regretted nothing more than not having associated himself more with the general run of men of his own time. No one quite realises the great value to an architect of a large and intimate acquaintance among men of his own profession; the stimulus thus offered was enormous. Of course, there were people like Mr. George Devey who had carved out their own way and done most excellent work alone; but people of that kind were an exception to the average. If architects are to keep abreast of their time and feel the

impulses of modern developments it was necessary to know those working around them. They had to be professional men as well as architects. It was in such a direction as that that the Association proved so valuable. It was well-known that a good deal of the most important professional work was given out by architects themselves in the capacity of advisers. The latter's position was a very responsible one, for they not only have to find men qualified by their art, but by their business ability, tact, and all the other qualities. Consequently, however well they may know a man by reputation, they may hesitate to put his name forward owing to lack of personal acquaintanceship, for it was only by such acquaintance that a man can get to know of the existence of those qualities which are just as important as power of design. The help which one architect can get from another is most important and could not be overlooked. On entering one's first job unexpected difficulties arise. The young architect could then approach an elder, whose friendship he had earned on the sports-field or in the club, who would otherwise be unapproachable. Everyone acted and re-acted on each other, and it was by that action and reaction that general progress was made. Part of the value of the Association was in the opportunity it afforded of meeting people who are to influence one and whom one is to influence. He sincerely hoped that all the activities connected with the Association would flourish, for time might be very well spent in the various clubs as well as in the various classes.

Mr. H. D. Searles-Wood said that as the oldest member of the A.A. present it gave him great pleasure to join in the vote of thanks. He was always a great believer in having new blood, and he was gratified to see the number of young men present whose fathers had been members before them. He hoped that the sons would keep up the old tone.

Mr. Horsley, in replying to the vote of thanks, said he was extremely grateful for the very kind way in which those present had received his remarks. The discussion had been most cheering and helpful, and he looked forward to a most pleasant year of office.

The next meeting will be on October 28, at 8 P.M., when a paper by Mr. Lawrence Weaver, F.S.A., Hon.A.R.I.B.A., will be read, entitled "Small Country Houses of To-day." The adoption of Council's report and balance-sheet for session 1911-12 will also come up. (Combined meeting with the Camera, Sketch and Debate Club.)

INSTITUTION OF MUNICIPAL ENGINEERS.

The fourth annual general meeting of the above Society was held in London on Friday and Saturday of last week. The proceedings opened on Friday morning with a meeting in the Council Chamber, 4 Southampton Row, W.C., when the annual report was presented, a new Council elected, and a presidential address delivered by Mr. Frank Latham, M.Inst.C.E.I., borough engineer and surveyor at Penzance.

After an interval for lunch the meeting resumed with a discussion on four papers, which were taken as read. The subjects were introduced in a few words by their authors. The first paper presented was by Mr. F. W. Platt (Member), and was entitled "The Modernising of Building By-laws." It was as follows:—

Mr. F. W. Platt, in introducing his paper, said he would like to ask members to make themselves thoroughly familiar with modern materials. In the hands of an unscrupulous person reinforced concrete was a most dangerous material. He suggested that when any member has any new form of construction brought under his notice he should communicate the fact to the secretary of the Institution.

The recent circular letter of the Local Government Board to local authorities directing attention to the need of reviewing the existing codes of by-laws in operation in the various local governing centres of England and Wales is deserving of much attention.

By this letter the Board recognise that the use of modern materials and modern methods of construction is neither adequately nor precisely sanctioned in the Model Code, which was first issued in 1877, and has from time to time been extended and revised, but is still mainly in its phrasing identical with the original issue.

That the Board have until now shown reluctance to modify or revise their code, upon which great care and forethought had been expended, is not to be wondered at; for anyone whose duty it has been to draft a building by-law will know how difficult it is to find words which, while being precise and fulfilling the conditions of statute law, furnish that *via media* which reasonable persons feel they can sup-

port. The Model Code has, on the whole, been serviceable. It now needs modernising, and the intention of the Board to do so is greatly welcomed.

By-laws dealing with new streets and buildings may be made under Section 157, Public Health Act, 1875; Section 23, Public Health Acts Amendment Act, 1890; and Section 24, Public Health Acts Amendment Act, 1907.

The object of making rules or by-laws might shortly be said to be this: that every individual who decides to lay out any land for building purposes or to erect buildings thereon shall, in such laying out and subsequent development, provide at each building a quota of open space for traffic purposes and for domestic purposes, shall construct each building so as to provide against fire, be healthy in itself, be properly drained, be responsible for its share of the outfall sewer, so that all would collectively form a properly developed town.

That by-laws can be drafted which will be sufficiently comprehensive and explicit to furnish all the guidance needed to attain this is certain. They will not check building, as is popularly supposed. They will ensure good building.

The authors of the Model Code in drafting the earlier forms of by-laws had regard mainly to buildings of stone or brick construction, and, apart from what is considered their restrictive character, they are inappropriate to types of construction now in use, such as buildings of hollow blocks or slabs of terra-cotta, concrete, reinforced brickwork, &c.; for hollow or half-timbered walls, and steel or other framed walls hung with tiles, slates, &c., filled in where necessary with incombustible materials; for buildings where piers are employed, and where large window openings are needed; or for the thickness of walls of outbuildings.

Again, the ordinary clauses for the laying out of roads do not permit of the class of roads which have been designed in some garden cities, neither do they differentiate between the type of paving needed for varying grades of roads or for exceptional arrangements which are demanded in certain cases by the configuration of the ground. In a few words it might be said that the Code is voluminous without being comprehensive, and is too restrictive. It deals with details rather than types.

What form should modernising take? Take the question of walls, floors, and roofs—that is, to ensure "due stability" in them. Should not the knowledge of the behaviour of materials be utilised in determining the various sizes of the respective parts rather than tabulated sizes of the thickness of each wall or of the materials being set out in the form of a by-law? For example, the present Model Code prescribes that buildings shall be enclosed with walls termed external, party, cross or return walls constructed of hard incombustible materials such as good bricks, &c., and then proceeds to give the thicknesses of the walls according to the particular height the wall is to be erected, neglecting entirely whether any loads were to be transmitted to such walls from floors or subsequent loading when in use.

In this matter of loading it is common practice to find that the joists of buildings of the cottage type were rarely built into party walls, but often are supported upon a wall half-brick in thickness and an external wall, the thinner wall thus carrying a greater proportion of the weight of the building than the thicker external wall. Obviously such an external wall, if built of the by-law thickness, might be either too thick when not loaded or too thin when loaded. The Code does not recognise a wall half-brick in thickness, nor does it, under such conditions as here mentioned, prohibit its use. Another fallacy is where almost the whole of a storey is required as an opening. The Code here requires sufficient piers to be provided, or in some cases storey posts, but never states what a sufficient pier or storey post is, or how such is to be determined.

Again, modern buildings of the warehouse type are rarely simple in construction. They are often built upon highly valuable land which leads to a varying distribution of the loads supported by the floors, whose strength has to be determined by the loading circumstances of each particular case. To apply a model code based upon a universal system of high loading to such buildings would result in unnecessary expense being incurred in the thickness of the walls or strength of the floors, without necessarily providing uniformity of strength throughout the building.

Therefore, if full advantage is to be taken of this opportunity to revise an existing code of by-laws, consideration should be given to the desirability of including in the revised code power to determine that the various parts of at least buildings of the "public" or "warehouse" class

should be so designed that when loaded as intended the buildings would be in equilibrium throughout. Obviously much care would be needed to draft governing regulations. The following points, however, might form the subject of consideration:—

1. The type of building and the purpose for which it would be erected.

2. The type of material to be used in its erection.

3. The maximum stresses permitted in such materials.

4. The method of calculation to be followed in determining the resistance of the materials, and the effect of the loading on the various parts for the determining of both external and internal forces.

5. The extent of the details required from the building owner to enable the local authority to be satisfied that due stability would be obtained, and the nature of the declaration that the building would be duly supervised during construction.

6. The nature, type, and extent of the tests to be made during and after erection to ascertain that the above conditions were fulfilled.

7. The guarantee that the building would not be internally stressed to an extent exceeding the designed resistance.

Some such regulations would at once provide all the power that a local authority needed to ensure "due stability" in every portion of buildings other than those of the domestic type, and would remove from the Code all those cumbrous rules respecting thickness of walls and their attendant variations, consequent upon some contingency often more or less remote.

In matters of means of egress, disposition of seating in public assembly rooms, position of staircases, situation and type of sanitary accommodation in buildings, all could be more usefully regulated by taking into account the type of construction of the building as well as the nature of the business or undertaking to be carried on therein. What always obtains under the Model Code is that a minimum of structural stability, based upon an ordinary use, is prescribed; and this becomes in practice an actual maximum.

Domestic buildings would require different treatment to public or warehouse buildings. They are subject to greater changes and different usage. Yet modernising even in their "structural stability" by-laws is possible. Why should walls require footings if resting upon sufficient concrete or rock foundation? Why should parapet walls be needed, with all the risk of conveying moisture into the houses? Why should window frames be required to be set back 4½ in. from the face line of buildings? Why should overhanging eaves be prohibited, considering all the protection from dampness they afford to the walls beneath them? Many other questions could be usefully asked by those revising by-laws.

And the inquisition could be carried on throughout those by-laws which are made for "purposes of health." Why should isolating traps with their ground level inlets be demanded? Why should not power be obtained to enable a regulation to be made governing the cubic contents of a room, and prescribing the ratio between height, length and width of all living-rooms instead of the present one dealing only with height? Should not a regulation be possible requiring all dwelling-houses to be provided with a pantry or larder, and also that all living-rooms should have at least one window in them through which the sunlight can pass every day the sun shines? By-laws dealing with the construction, direction, width, length and paving of streets should be carefully modernised. Should not regulations be made enabling the owners of streets to complete them with dustless paving rather than with the ordinary sett paving, which is often laid with open insanitary joints?

The limitation of the number of houses or other buildings in a row should be considered, and rules prescribed to direct that the course of streets should be such as to enable the maximum amount of sunlight to pass into the buildings erected upon their sides; and to further make provision for the encouragement of open spaces at the front in addition to the land set apart for street purposes, the latter of which might be reduced in width if additional space were provided for use as garden land in front of buildings. Some balancing clause, whereby this type of laying-out would be made possible, would have an encouraging effect upon the minds of persons who would be considering the development of land, especially if the effect of the clause would be to reduce the cost of street works, which oftentimes is greater than the value of the land for which the works are undertaken.

Many other points might be adduced to show the need of

modernising, but one question should be kept foremost in the mind of those considering the subject, and this is it: That the local circumstances should be fully considered before determining the phrasing of any particular regulation.

While much might be learned by a careful perusal of other local authorities' by-laws, it would not be wise to blindly follow a by-law made for similar purposes by another authority, unless it was found to precisely and definitely express the exact needs of the authority desiring to adopt it. For experience does not confirm the desirability of accepting without question a by-law or regulation made by another authority upon some subject which is under consideration. This, together with a code of by-laws framed upon the knowledge obtained of the behaviour of materials under modern loading, would place a local authority in possession of by-laws freed from the objectionable features attributed to the present Code—namely, their elasticity and applicability only to stereotyped forms of construction. Some local authorities might urge that a code based upon these suggestions would be expensive to administer, because a technically trained staff would be required for the work; but as buildings in themselves are an essential indication of a town's prosperity, and are vitally necessary not only for the town's business but also for the housing of the population engaged in such business, it is not unreasonable to claim first importance for the subject. That men in the service of local authorities are capable of administering a code of by-laws based upon technical knowledge is beyond doubt; and it is not too much to say that such a code would receive the approval not only of the members of professional societies engaged in construction, but also of all whose desire it is to have well-developed towns with soundly constructed buildings therein.

Mr. Horace Cubitt, A.R.I.B.A., in opening the discussion, remarked that the subject of building bye-laws was not an easy one, and did not always receive the attention it should do. Personally he was able to look on it from a useful standpoint, as he had had both to supervise and to obey bye-laws. There could be no doubt that the necessity for modernising the codes of various districts was becoming an urgent matter. The subject divided itself into two parts, viz., the bye-laws for ordinary forms of construction and those which apply to special forms. As regards the first class, there were, in his opinion, a great many cases in which there was room for amendment. He had no hesitation in affirming that there was no constructional necessity for houses of three storeys to be built of 14 inch walls. It would greatly help the progress of cheap and sound building if the requirements were modified so as to admit in certain similar types of the use of 9 inch walls. Apparently the Local Government Board are willing to allow each authority to act on its own in this matter. There is a good deal to be said in favour of each town having its own special ordinary building bye-laws owing to the manner in which materials and details differ. But when one came to steel and reinforced concrete construction it did not seem to him that it mattered whether one built in Cornwall or in Caithness. It would be an exceedingly difficult matter for each authority to frame its own standard of requirements for this class of work. It would be quite sound to take the report of the R.I.B.A. as a common basis. But if the London County Council frame a model code for ordinary buildings they may frame a code for this type of construction, where it was even more wanted. Such buildings as warehouses should not be treated by hard and fast rules.

Mr. Adams, in the course of some remarks, said the question of load on floors was a difficult one. It makes an enormous difference in the design as to how the load is to be applied. A man might want to put up a very cheap building for a particular purpose and he might make his loads as low as he could persuade the surveyor to pass. But it did not appear to him to be advisable to pass such a building, for in the course of years it might be let to other trades where a different floor-load altogether prevailed. The only satisfactory way is to have a figure which experience shows to be as low as is safe and as high as is likely to be required.

Mr. Frank Latham said that one point had struck him, viz., that the Institution could take this matter up as a small committee. It would be invaluable if such a committee would consider the subject and then give the fruit of their labour to the members who have to deal with reinforced concrete structures in the country.

(To be continued.)

FRENCH RENAISSANCE ARCHITECTURE.—I.

THE first of a course of ten public lectures on "French Renaissance Architecture" was delivered last week at University College, Gower Street, W.C., by Mr. W. Henry Ward, M.A., A.R.I.B.A. It was entitled "Introductory: The Renaissance in Italy and Other Countries."

The great wave of change which we call the Renaissance, said Mr. Ward, gathered in Italy in the fourteenth century and swept over Europe, enveloping France in the fifteenth and England in the seventeenth century, transforming the mediæval into the modern world. The Middle Ages were the Ages of Faith; their spiritual fervour was well expressed in the Gothic cathedrals, while feudal castles show the violence of the social order. But, as the Middle Ages wore on, chivalry and mysticism gave way before an inquiring spirit. Renaissance architecture arose to express a new order of ideas to which Gothic no longer corresponded. A new style endowed with some of the qualities of ancient architecture must inevitably have been evolved, because Europe was after a thousand years approaching the state of civilisation and thought of classical antiquity. That this new style became based upon Classic was due to the fact that the new movement started in the old centre of the Roman Empire.

Italy, so to speak, the least mediæval country of Europe, was in the fourteenth century on a higher plane of material and intellectual culture than any of the other countries. The dissensions of Italy had contributed to prevent her ever developing a truly national Gothic style, and her local styles retained almost throughout the Middle Ages much of the principles of Classic. It is not surprising that Italians should have gone direct to the Roman monuments when they sought new architectural expression rather than to the Goths and Lombards, who had destroyed them. In the early Tuscan Renaissance there is hardly anything that can be described as copying of Roman buildings. But native types are treated with a new sense of dignity, order and proportion, with a more skilful and logical application of elements hitherto used confusedly or clumsily. Later in Lombardy and Venetia the change went less to the root of the matter and resolved itself largely into the rather ostentatious adoption of a new type of decoration. This early phase was succeeded in the late fifteenth century by another which may be termed the Roman or "Advanced" Renaissance. It more closely followed the ancient examples, though it was rather a development of the Florentine than of the North Italian Renaissance. Its real founder was perhaps Alberti, who exercised a powerful influence through his writings as well as his buildings. Alberti's contemporary, Bramante, who was less a theorist than practising architect, arrived independently at a similar position, but went beyond him. This further-developed new manner was practised during the early sixteenth century by a brilliant group of architects, the San Galli, San Michele, Peruzzi, and Raphael; and from Florence and Rome spread to all Italy.

This Golden Age was of short duration, and ceased at the sack of Rome in 1527. Subsequent architecture soon began to run in two main streams. On the one hand the art of design became an exact science and tended to lose its vitality; while on the other an opposite school, headed by Michel Angelo, scorned all rules. In the late sixteenth and throughout the seventeenth centuries the latter was chiefly in the ascendant, producing the Barocco and Rococo styles. In the eighteenth century the pendulum swung once more decidedly to the puristic school, and new direct study of ancient architecture began.

In France during the early years of the fifteenth century anarchy reigned supreme, until the heroism of Joan of Arc and the astuteness of Charles VII. and Louis XI. gradually brought order out of chaos. France became a great power in Europe. But her mediæval institutions and ideals had been shaken. At first the architectural revival followed the old traditions. But the inspiring ideals were gone, the problems all solved, so there was nothing left for the builders but to embroider on old themes. It was an architecture of unrest. Here and there, said Mr. Ward, we may discern gropings after something broader and simpler, more regular and reposeful. There was a marked tendency to substitute curved for pointed forms. An easy transition to Classic was provided by the florid form of the Italian Renaissance with which the French first came into contact. By this time the Church had fallen from her position of supremacy into second place, the forces of secular life taking the lead.

The next lecture will deal with "The Beginnings of the Renaissance in France, the Italian Craftsmen, Charles VIII. and Louis XII."

THE SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

SEVERAL matters of more than ordinary interest were referred to at the opening meeting of the Sheffield Society of Architects and Surveyors. The President, Mr. J. B. Mitchell-Withers, alluded to the inadequate representation of provincial Societies on the Council of the Royal Institute, and other speakers dealt with the decrease in the number of students entering the profession.

The President, in his inaugural address, first referred to the pleasure he had derived from being during the past year the representative of the Sheffield Society on the Royal Institute Council. From what he had seen and heard, the Metropolitan architects attached great importance to the views of the provinces expressed by the allied societies. There appeared, however, at present to be no adequate means of effectually expressing the opinions of the provincial members as a whole. If it were possible to have more inter-communication between the provincial Societies and to obtain a greater and more permanent representation of provincial men on the Institute Council, that would tend to the benefit of the profession as a whole. It was the concentrated and combined opinion, after an interchange of views between allied Societies, that was needed to be of value and to carry any weight.

He saw that some of their younger members were associating themselves together this session with the object of having lectures of their own. He wished them every success, and hoped the scheme would be well supported. One of the most valuable acquirements that could be cultivated in early life was the art of teaching oneself. It helped the student to profit more from the teaching which he received from others, and increased the faculty of discriminating in the choice of that which should be vividly impressed on the memory for future use. He advised them to adopt method in all things, and not to get into the habit of putting off until to-morrow those things which were disagreeable. In studying the life history of various architects, he was struck with the fact that their success depended largely on the habits and methods they had formed when young, and which they were able to apply satisfactorily when the call to real work came.

Mr. A. F. Watson, in moving thanks to the President for his address, agreed that it was a pity that more members of the allied Societies had not the opportunity of being elected on the Royal Institute Council. There might be very prominent and clever men in London—no doubt there were—but there were also some in the provinces.

Mr. E. M. Gibbs, who seconded, thought when the Institute were reconsidering their charter the provinces should ask for larger representation. At present Sheffield could only be represented about once in three or four years, and that was a very small share of representation for a Society like theirs. He did not see why the London people should rule the roost, and in many cases, he regretted to say, misrule it.

Another matter mentioned by Mr. Gibbs was the remarkable scarcity of young men entering their profession. Whether they had got the reputation of being a hard-worked and poorly-paid profession he could not say. He supposed that must be it, for many of the young men of to-day wanted to be well paid and do little work. But it was certainly strange that so few were entering the profession, and that there were such a small number of students in the Department of Architecture at the University. It was certainly not the fault of the lecturer, but if the young men would not come forward they could not send them to the University. It was rather a pity that they had not better support for such an excellently equipped department.

Mr. H. L. Paterson, speaking in support, referred to the scarcity of the students in the profession. But he did not see what they could do if the young men would not come in. If there was some way of burning down the half of Sheffield it might be a good thing for Sheffield, and incidentally might benefit them.

The resolution was adopted with great heartiness.

The President, in his reply, thought there were a great many more architects to-day than in times gone by in proportion to the population, and unless in some way the work increased it was possible that there would be less pay. They must also remember that a great deal of important work was now undertaken by public bodies, he believed at much greater cost than formerly. He did not say that was so in Sheffield, but it certainly was in some places, and probably the fact that a great deal of the work which was prepared was never carried out accounted for some of this extra cost.

The Architect.

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FORTHCOMING EVENTS.

Saturday, October 26.

Royal Sanitary Institute: Provincial Sessional Meeting at Alton, Hants, at 11.15 A.M.

Monday, October 28.

Architectural Association: Paper on "Small Country Houses of To-day," by Mr. L. Weaver, F.S.A., Hon. A.R.I.B.A., at 8 P.M.

Thursday, October 31.

London University: Course of Lectures on "French Renaissance Architecture" by Mr. W. H. Ward, M.A., F.R.I.B.A., at University College, London, at 6 P.M. (4)
"The Mature Renaissance: The School of Fontainebleau and the First French Architects. Henry II."

Monday, November 4.

Royal Institute of British Architects: President's Opening Address at 8.30 P.M.

Wednesday, November 6.

Nottingham Architectural Society: Exhibition and Criticism of "Constructional Details and Testimonies of Study" by Mr. W. R. Gleave, A.R.I.B.A., at 8 P.M.

RURAL BY-LAWS.

A PROVISIONAL draft has been issued by the Local Government Board of Model By-laws which, presumably, are intended to meet the serious objections that have been raised to those hitherto existing as causing unnecessary expense in the erection of small houses in rural districts, and rendering it practically impossible to build cottages that could be let at a rent within the means of the ordinary farm worker or others for whose occupation they are intended.

These draft by-laws are, from the alternative form describing the Authority by whom they are purposed to be made, intended to be applicable to boroughs as well as to urban and rural districts. They may, therefore, be understood to be expected to meet the desirable modification of present by-laws for the development of garden cities, suburbs, and villages. We recognise that the requirements of these new forms of social settlement have, at any rate to some extent, been met by the provisional draft, and certain artistic methods of construction are now no longer practically prohibited, and we also think that the cheap cottage will be somewhat nearer realisation in districts to which these revised by-laws would apply.

Dealing first of all with domestic buildings, it is now possible to construct a cottage or a pair of cottages unfettered by rigid requirements for the external walls. These cottages must be not more than two storeys in height. They must be separate buildings or part of a block of buildings containing not more than two. They must have foundation walls not less than nine inches thick constructed of good bricks or stone and good mortar or other hard and suitable incombustible material, properly and solidly put together. These walls need only be carried to a height of six inches above the surface of the ground, and must be provided with a proper damp-proof course of sheet lead, asphalt, slates laid in cement, or other not less durable material impervious to moisture, or as a substitute for these walls sufficient piers of good brick, stone, or other hard and suitable material, or of good cement concrete having proper footings, may be used to support the building.

This exemption from the rigid regulations of construction of cottages is granted only to buildings whose capacity shall not exceed a certain number of cubic feet, which is not suggested in the draft but has to be determined by the local Authority. Similarly a cottage must be distant from the opposite side of the nearest street and from the boundary to any adjoining land or premises a prescribed number of feet, which has to be similarly determined.

We now come to modifications of construction applicable to garden cities, suburbs and villages. Provision

is here made that external walls may be hollow, but the regulations for hollow walls might, we think, be desirably amended. It is at present provided that the cavity shall throughout be of a width not exceeding two and a half inches; this, we think, is a mistake, and should rather read not less than two and a half inches. The only reason for limiting the width of the cavity is the presumption that this is necessary to ensure that the two parts of the wall shall be securely tied together; but provision is already made in a further stipulation that this shall be done with suitable bonding ties of adequate strength. If the ties are suitable and of adequate strength we see no reason why the cavity should not be wider than two and a half inches, and for many reasons the wider cavity is preferable. We are pleased to note that it is provided that a cavity shall be properly drained and ventilated. We do not, however, think that it is well for the by-law to rigidly prescribe that the thickness of each part of the wall shall be not less than four and a half inches, and that the aggregate thickness of the two parts, excluding the width of the cavity, shall be not less than the minimum thickness prescribed for a solid wall. This seems to us to debar the use of walls of reinforced brickwork or other material in which a stronger and more weatherproof wall might possibly be contrived with less thickness.

Hollow walls may also be constructed of hollow blocks of cement concrete, but here again there are stipulations which may possibly tend to stifle invention. The size of the cavity is limited to a third of the horizontal sectional area of the block, and also to a width of four inches. If the total thickness of a block, including the width of any cavity, is nine inches the width of the cavity is reduced to two inches by the stipulation that the substance at the sides of the cavity shall be not less than three and a half inches in thickness.

In all classes of hollow walls it is rightly provided that the heads of door frames and window frames, also lintels, if projecting into the cavity, shall be covered throughout on the upper side with a layer of sheet lead or other impervious material.

Timber-framed buildings will now be permitted under these model by-laws, when such construction is used for new domestic buildings either detached or in a block of not more than three houses, distanced not less than fifteen feet from any other building not being in the same curtilage, and not less than seven feet six inches from the boundary of any land or premises adjoining such curtilage not being a street. The timber-framed buildings are of two kinds; first, those in which the timbers are exposed, in which case the space between the timbers shall be completely filled in with brickwork or other solid and incombustible material, and a thickness of at least

four and a half inches of such material shall be placed at the back of every portion of timber.

In the other case the timber framing may be covered with tiles, slates, or other suitable incombustible material, for both storeys where a building is two storeys high, and for the two upper storeys where the building is three storeys high. Timber-framed buildings are to have their timber framing supported on a solid external foundation wall carried at least six inches above the level of the ground. Timber framing is also permitted for any part of an external wall of a domestic building constructed in the form of a gable or a bay for a bay window.

With regard to the footings there is a concession to the objections that have been raised to the existing regulations that is only half-hearted in character. If the thickness of the wall does not exceed nine inches, footings need not be used provided the wall is carried upon a layer of good cement concrete of sufficient thickness. This is a recognition of the fact that a sufficient bed of concrete may be a good support for a wall, but why this should not be recognised for a fourteen-inch or an eighteen-inch wall as well as for a nine-inch wall we cannot understand.

There is a provision made with regard to the construction of the walls of basements which, we think, is not quite happy. These walls will have to be constructed either impervious to moisture or as hollow walls, and it is required that the hollow shall be taken down to the base of the wall, and that there shall be a damp course at the base. We think that it will be rather difficult in some cases for the builder of such a wall to comply with the previous sensible stipulation that the cavity shall be properly drained and ventilated.

A provision is made in the new by-laws that the wall of a new building which shall be built of cement concrete or of reinforced concrete need only be of such thickness as shall be necessary to secure due stability. A concession is also made to artistic prejudices by a permission that party walls need only be carried up to the underside of the slates or other roof covering.

We may now turn our attention to the question so vital to planning on garden-city principles, the construction of new streets. It is provided that a new street intended for use as a carriage road shall be thirty-six feet wide at least; but where the main length of such street shall not exceed feet, and it is intended that the front main wall of every building erected in such street shall be distanced not less than feet from the centre line of such street, the width thereof may be feet. If the road is not intended to be used as a carriage road, and is not more than 100 feet in length, the width may be reduced to twenty-four feet, and it is provided that if the street is not to be used as a carriage road or for other buildings than dwelling-houses, the width of the street and the distance of the dwelling-houses from the centre line may be diminished to dimensions to be determined by the Authority adopting the by-laws. Back roads are, however, to be provided in such cases as a secondary means of access. The regulations, therefore, for the construction of roads seem to us to make due provision for laying out new districts on garden-city principles.

NOTES ON BOOKS.

"Kaemmerer's Practical Letter Book." Edited by A. S. Jennings. Containing several hundred alphabets in 140 plates, together with descriptive text, for the use of sign painters, show-card writers, decorators, artists, and craftsmen. By J. H. Kaemmerer, silver medallist. (London: Trade Papers Publishing Co., Ltd.)

For the sign writer this is a useful collection of examples, and for the architectural student who wishes to embellish his drawings with something new and fanciful there are suggestions which, properly studied, may prevent him from introducing into one word the characters of several alphabets. The novelty which

several will find is chiefly due to the inclusion of recognised alphabets from the Continent, particularly Germany and Holland. Many of the best of those that are known to English typography are, however, not to be found included.

"Pompeian Decorations." By R. A. Briggs, architect, Soane Medallist, Fellow of the Royal Institute of British Architects. (London: B. T. Batsford. 25s. net.)

Although it cannot be said that the three-colour process is a perfect one for the reproduction of all and any actual effects, it has by now attained such a considerable degree of excellence that in the hands of a skilful craftsman it can be made to render a very close approximation to the actual colour of painted surfaces or tinted material. It is at any rate up to the present the only means by which printed reproductions of colour can be produced except at exorbitant cost, and its employment has rendered possible the publication at a moderate price of Mr. Briggs's charming book on "Pompeian Decorations," in which, for the sum of twenty-five shillings, we have brought before us reproductions of the actual colourings and decorations of friezes, ceilings, walls, shrines, mosaic work, and the peculiarly Pompeian craft of using shells as part of the ornamentation.

Pompeian ornament for those who have been unable to see it on the spot has been almost entirely confined to monotone presentment, with occasional crude reproductions of the strident colour of work of the earlier period. It has remained, therefore, for Mr. Briggs to seize the opportunity that modern printing processes afford to give to those who are necessarily stay-at-homes some true impression of what the colour of Pompeii really was.

How valuable this information is one may well realise from a comparison of two plates in the book—one in colour of mosaic work and the other in monochrome, in which the various colours have to be indicated by the words, "yellow ochre," "indigo blue," "light red." It requires a vivid imagination to invest the latter with an informative exposition of the colour scheme. Mr. Briggs in his introduction gives a brief but useful sketch of the history of Pompeii and the main features of its domestic architecture. In this Mr. Briggs quotes the various styles into which the decoration of Pompeii have been classified by Mr. Mau, who has suggested the following divisions: (1) the incrustation style; (2) the architectural style; (3) the ornate style; (4) the intricate style. Examples of each of these are given by Mr. Briggs, and enable us to grasp the meaning of the classification and the full development of Pompeian decoration, and to understand how completely Greek or Hellenistic feeling dominated the character of the decoration, even when it was the Hellenistic of Alexandria.

We must not omit to mention that in addition to coloured plates there are several reproduced in monochrome, in which Mr. Briggs has given us examples of decorative forms which should be suggestive to those of us who are swimming in the tide of Neo-Grec.

"Building Construction and Architectural Drawing." By John A. Reid, architect, Licentiate of the Royal Institute of British Architects, teacher of Building Construction under the Glasgow School Board, Ardrossan School Board, and the Insurance and Actuarial Society of Glasgow. (London: Blackie & Son, Ltd. 4s. net.)

This publication is a portfolio of eighteen plates in black and white, accompanied by a small pamphlet containing a commentary rather than a description or explanation of the various pieces of construction drawn on the plates. These latter are, indeed, sufficiently furnished with information to require little explanation.

The essential characteristic of this publication which distinguishes it from others of a similar nature is that the construction is exemplified by the use of decent

designs, thus tending to instil into the mind of the young architect the important fact that design is the outcome of construction, and not something which can be learnt separately from it.

It is, perhaps, too much to expect that there should be no slips in the drawing of so many examples of construction, but we trust that when a new edition appears there will not be drawn a section of a hollow wall in which the moisture that penetrates into the hollow runs along the damp course to the wall plate; nor that curved trusses in modern roofs will be suggested as desirable, which have to be cut out of four-inch stuff twenty-four inches wide.

The lantern light for a billiard room might with advantage be made larger than the table, so that if it does leak or the euphemistic "condensation gutter"—which, by the way, is in the detail lacking an outlet—should overflow, there will be a chance of the drops falling clear of the table. The whole work is so excellently modern and up to date that we should like to see the few blemishes which it contains removed when a new edition appears.

"Longmans' Historical Illustrations. England in the Middle Ages." Drawn and described by T. C. Barfield. In six portfolios. (London: Longmans, Green & Co. 2s. 6d. net each.)

These portfolios contain a number of plates, with short descriptive text, intended to illustrate the architecture and customs of Medieval England from the eleventh to the fifteenth century, and whilst they may be useful in assisting boys and girls at school to think of history as something more than a matter of battles, treaties, and dates, they are scarcely sufficiently correct in detail, certainly as regards architecture, to render them capable of conveying more than an impressionistic idea of the part that it played in Medieval life. The architectural details are for the most part inaccurately drawn, and some of the construction indicated is absolutely impossible.

"Elizabethan Interiors." By C. J. Charles. (London: George Newnes, Ltd. 42s. net.)

This is a collection of cleverly drawn and well-reproduced illustrations of interior decoration, or rather architectural treatment, accompanying a sufficiently accurate, though not very detailed, description of the history of the internal treatment of domestic architecture from Norman to Georgian times. The drawings illustrated are of many rooms the author has carried out in England and America from old material that he has sedulously sought and carefully collected. Amongst these drawings of his own work are one or two others which have been specially designed and prepared for this book, to illustrate some examples characteristic of the earliest periods of English decoration. In short, the volume is a sumptuous business catalogue.

"Architecture. An Introduction to the History and Theory of the Art of Building." By W. R. Lethaby. (London: Williams & Norgate. 1s. net in cloth, 2s. net in leather gilt.)

This little book may be briefly described as a serious attempt to convey to the mind of the layman what in Professor Lethaby's view is the meaning of Architecture. Doubtless the principles of the art can be very well explained from the buildings of the most ancient periods, and perhaps better than from those of later date, for in those early days there was less affectation in art. Men then built as they wished to build, not as they thought they ought to build because someone else had set an example before them. Hence we can understand that of the 251 pages in the volume 199 deal with architecture prior to the thirteenth century. Of course, the tone of the book is tinged with Professor Lethaby's personal and peculiar views, particularly the exaltation of building above design as an element of architecture.

EWELL, CHEAM, AND NONSUCH PALACE.*

EWELL.

EWELL, in the Hundred of Coped-Thorn (Cophthorn), and in the rural deanery of Leatherhead, now forms a part of the Rural District Council of Epsom, and stands on a spot where the chalk of the Downs joins the clay district to the north-east, and at the junction of the two a number of pure water springs arise, forming the stream known as the Hogsmill River, which joins the Thames at Kingston. These springs, which can be seen rising from the roadway, not only furnished the name of the "Spring Hotel" (where we are now assembled), but probably gave Ewell its name, as the generally accepted derivation of the Domesday *Ætwell*, *Etwell*, or *Attewell*, is a corruption of *At Ye Well*. The older flour mill by the side of the stream has, no doubt, been there from the Middle Ages, and very likely stands upon the site of one of the two mills which were referred to in the Domesday Survey as being there, and then valued at 10s. It then belonged to the King, and continued in the possession of the Crown until 1156, when Henry II. gave all his lands in Ewell to the prior and canons of Merton. According to the author of "Greater London" (Mr. E. Walford, M.A.), Richard I. granted the prior and canons of Merton 101 acres of land at Ewell "without impeachment of assart" (which means that they might convert the woodland into enclosures of arable or pasture). On the suppression of the Priory of Merton, the manor reverted to the Crown, and it was annexed to the Honour of Hampton Court by Henry VIII. Queen Elizabeth afterwards disposed of Ewell to Henry Fitz Alan, Earl of Arundel, whose daughter Joan was married to Lord Lumley, and who died without issue, as the estate passed on to his nephew, Henry Lloyd, the son of Lord Lumley's sister Barbara by her marriage with Humphrey Lloyd, of Denbigh, the well-known antiquary. From him the manor ultimately descended to his great-grandson, Dr. Robert Lumley Lloyd, who became rector of St. Paul's, Covent Garden; and he, also dying without issue in 1730, left the estates, subject to his sister's life interest in them, to Lord John Russell, afterwards Duke of Bedford. The Duke, however, did not hold them long, as about the middle of the eighteenth century he disposed of the manor of Ewell to Mr. Edward Northey, of Epsom, the same gentleman who purchased West and East Cheam manor houses, which will be referred to later. The Northeys have for many years been lords of the manors of Ewell, Cheam, and Cuddington. The present lord of the manor is the Rev. Edward Northey, of Woodcote House, Epsom, which has been the seat of the family for many generations, and who is greatly beloved and respected in the neighbourhood.

THE WATCH-HOUSE.

The main street of Ewell is still quaint and interesting, with not a few of its old-time cottages and buildings to be seen dotted here and there, several being built in the time of the Crusaders after the Eastern fashion. It must be remembered, too, that Ewell long enjoyed a degree of importance, being the head of a deanery; and up to the middle of the seventeenth century a weekly market was held there, and sheep and cattle fairs took place twice a year, which brought breeders and buyers from all parts of the kingdom. A "Watch-house" has stood for centuries near the junction of High Street and Church Street. Here disorderly persons were locked up for the night, and taken to Epsom for trial the next morning.

THE CHURCH OF ST. MARY.

The present church, named after the old one—St. Mary—was built in 1848 (principally through the generosity of the Rev. Sir George Glyn), at which date its predecessor was pulled down, with the exception of the tower. For some time this tower was used as a mortuary chapel. As we saw it, it is now covered with thick ivy, and the outside walls are hardly visible. These are of flint, faced with worn stone, there being several courses of red brick in the upper portion. The old church was built of flint and stone and in the Perpendicular style. It had a nave, chancel and south aisle, with a chapel opening from it. Many of the brasses and monuments were saved and placed in the south-west corner of the new church, which is built in the Early English style, and has a red-tiled roof above the white stonework, which at once attracts attention. It is large, has a chancel, nave, south aisle and a north aisle as wide as the nave, which gives the inside of the church an odd appearance.

* Read at a meeting of the Upper Norwood Athenæum by Mr. W. H. Truslove.

At the west end is a square embattled tower. In 1893, when the church was restored, the organ chamber was added. The pulpit is both beautiful and imposing. It is composed of alabaster and various marbles, and was given in 1897 by Edward W. and Jessie Martin, in memory of their son and daughter. The font, believed to be Tudor, came from the old church, as also did the Communion table. The chancel is divided from the nave by a dark oak screen, also a relic from the old sanctuary, which Mr. Wm. Henderson, the present people's warden, informs me is fifteenth-century work, and this, I find, is borne out by Mr. Aymer Vallance, M.A., F.S.A., who says:—

"In the chancel screen of the church (Ewell) are some remains of oak screen-work, apparently of the first half of the fifteenth century. It is, however, impossible to determine the correct dimensions of the original screen, yet enough has been preserved to prove that it was rectangular in formation, consisting of compartments centred at 2 feet 4 inches, and sub-divided by moulded minor muntins into two lights each. The principal muntins are faced with buttresses, square on plan, and crowned with crocketed pinnacles running up the lowest bead of the lintel. The fenestration head-traceries average 10 inches high by 11 inches wide. Of these traceries the existing screen, gates included, comprises altogether fourteen, which cannot well be in accordance with the original plan, because they work out at an uneven number, making incomplete compartments on each side of the gates. Presumably, therefore, there are either two lights wanting or two too many. A large portion of the middle rail is original, but the battlements and moulding attached to its westward face are of modern introduction. The paltry open panelling below the middle rail is not only quite modern, but there can be no disputing that it utterly misrepresents the ancient design. Of the lintel (17 feet 8 inches long) both ends are spliced with additional wood, but the greater part—about 13 feet 6 inches in the middle—is genuine. Along the top is fixed a Tudor flower cresting, of which only the northernmost 6 feet length appears to be entirely modern, though the rest has all been much patched and restored."

Six monuments are fixed in the south wall of the chancel, the most imposing being to the memory of Sir William Lewen, who was Lord Mayor of London in 1717, and who died in 1721. He appears in his robes of office, and wears a wig. Among the brasses, a striking one is to Lady Jane Iwarby, 1519. She is wearing a heraldic mantle, adorned with a pedimental head-dress, and she is kneeling. This, and one in Lambeth, are said by T. R. Fairbank, M.D., F.S.A., in his "Memorial Brasses in the County of Surrey," to be the only instances of heraldic mantles now remaining in this country. Close by also will be found the figure of a lady wearing the "Paris" head-dress. Among other monuments and tablets from the former church are memorials of the Glyns, Bulkeleys, Reids, Calverleys, Dowdeswells, and Monros.

The register dates from 1604, and contains, among others, the following curious entry:—"Matthew Montague, of Cobham, and Agatha Turner, of Leatherhead. Their agreement of marriage was three market days published in the market of Ewell, and they were married by Justis March, of Darkin, the 3rd of May, 1654." The vicarage house was built in 1883, and the church-room was given by the Rev. John Thornton, M.A., vicar, in 1890-91. The present vicar is the Rev. J. Wallace, M.A., who has only recently been appointed to the living, which is in the gift of Sir Gervase Powell Glynn, Bart.

EWELL CASTLE.

Ewell Castle is a castellated house erected in 1804, in the Early Victorian and Gothic style. There are embattled parapets and octagonal turrets, the walls being stuccoed. It is now the residence of Captain Clarence Wiener. The grounds adjoin Nonsuch Park, and contain the foundations of the Banqueting Hall of Nonsuch Palace, the positions of the corner stones being clearly visible. It is stated some cellars were dug out, but have since been filled in again. The grounds were laid out and the lake constructed and stocked with trout by the present owner at considerable expense.

EWELL POTTERY.

A valuable earth or clay was some time ago dug from a large pit close to the grounds of Ewell Castle, and this, on being baked, formed the tile-bricks afterwards referred to. Pieces of Samian ware, also complete vases of a grey ware, have been discovered in the vicinity; these are now

in the British Museum. These vases were probably placed round the large jar containing the bones of some prominent Roman citizen or soldier. The quantity of bones and pottery discovered would suggest the existence of a burial ground hereabouts, possibly near a Roman village.

NONSUCH PALACE.

The erection of Nonsuch Palace was commenced by Henry VIII. in 1538, and, as its name implies, at that date there was None Such Palace in existence. Indeed, as a Palace of Beauty, Nonsuch was intended by Henry to be incomparable—and a palace the like of which no English king had ever attempted to build. The locality was some twelve miles south-west of London, adjacent to Cheam on the east and south, Ewell on the west, and Malden on the north. The name of the locality of the park and the site of the palace was Codrington, or Cuddington, a manor which also had its own church, and formed a distinct parish, of which the rectory was appropriated to the abbey of Merton. There are now, however, no evidences of either village or church, these having been cleared to make room for the palace and its grounds. It would appear that Henry VIII. acquired the grounds from Richard de Codrington, the last of a family that had long resided on the estate, and who, as we have seen, bore the local name. The lands the King acquired at that date (1538) were formed into two parks: the Great Park (now Worcester Park) consisted of 911 acres; and the Little Park, in which Nonsuch Palace was erected, comprised 671 acres. Both were afterwards included in the Honour of Hampton Court. Henry, however, did not live to see the completion of the palace, and King Edward VI. (who does not appear to have proceeded with the building of Nonsuch) in the first year of his reign (1547) granted to Sir Thomas Cawarden a lease for twenty-one years of Nonsuch, together with some 158 acres of land, for which he received a rent of £5 5s. 8d. and all the timber and large wood. Sir Thomas was steward of the Royal manor. Among the documents which Mr. Kempe printed is a Royal Warrant issued in 1557 for two bucks for the "Maioir and his Bretheren of our Citie of Londone from our Greate Parke of Nonsuch." Shortly after this, in the same year, Nonsuch was alienated from the Crown, Queen Mary having sold it to the Earl of Arundel, who finished the building of the palace, and held it for some years. After that nobleman's death it reverted to his son-in-law, Lord Lumley. It is on record that during the time the Earl had possession of Nonsuch he entertained Queen Elizabeth on several occasions, once for a period of five days. The Earl died in 1579, after which Lord Lumley took up his residence there. Queen Elizabeth was, however, so charmed with the palace that she negotiated with the owner for its purchase, and in 1591 Lord Lumley received lands to the value of £534, and Nonsuch again became a Royal Palace. A steel engraving of the palace—as it appeared in 1582, which I have seen in the *Gentleman's Magazine* for 1837, which in all probability was made from Houfnagel's picture of Nonsuch Palace—appears, after reduction, in the "Homeland Handbook" of the district. It shows a large quadrangle, with stately towers at the corners, and cupolas (which probably were gilt) with bannerets and a vast number of tiny windows. Along the front of the building were lofty Tudor windows with bas-reliefs between them. In the park in the foreground a lady, said to be Queen Elizabeth, is seen riding in a chariot drawn by smartly caparisoned horses; a hound is bounding at the side, and the lady is guarded by halberdiers both on horseback and on foot; while behind a huntsman is being dragged along by two dogs in leash. In the distance, and on the higher ground beyond the palace, hounds and men are hunting a noble stag, which in the picture looks as if it were an aerial chase round the centre cupola.

On Sept. 8, 1599, Mr. Rowland White wrote to Sir Robert Sydney that "Her Majestie is returned again to Nonesuch, which of all other places she likes best." It was to Nonsuch that Lord Essex addressed letters to Queen Elizabeth signed SX., and at the latter end of that September when the disgrace of her favourite Essex took place at Nonsuch.

Queen Elizabeth was again at Nonsuch in 1600, where she spent some time in hunting; and it is said that on a later occasion when returning from the chase the reflection of the setting sun on the palace caused her to think it was on fire, which scared her Majesty so much that she rode away in terror, and never again visited Nonsuch.

The only record of James I. being at Nonsuch is in 1624; but that King Charles I. was there on several occasions is shown by the list of his knights, honours being conferred upon

them at Nonsuch in 1625, 1629, 1630, and 1632. Pepys, in 1663, referred to Nonsuch, and called it "a very noble house, with a delicate park about it."

The palace was untouched during the Parliamentary wars, and it is said to have been a refuge for Charles II.'s Exchequer during the time of the Fire of London in 1666. The Merry Monarch, however, sold it to Barbara, Duchess of Cleveland, who was also created "Baroness of Nonesuch" and Countess of Southampton. It was in order to meet the demands of this woman (the King's favourite mistress) that the palace was given over to the destroyer, the park being divided into farms.

Aubrey states that Lord Rosebery's famous house at Epsom—The Durdans—was built out of the materials of Nonsuch, which included the staircase of the palace. (This, the first "Durdans," was burnt down, and with it the staircase.) In the hall of Stone Court (otherwise Gaynsford Place) at Carshalton, pulled down about 1800, there was an ancient chimneypiece, also said to have been brought from Nonsuch. Part of the palace, however, was standing in James II.'s time, but the estate was alienated by the Duke

revenues, with the result that Cheam was separated, and became known as West and East Cheam. These were two distinct manors—the former being appropriated by the Prior, and the latter by the Archbishop of Canterbury. During the reign of Henry VIII. both manors were "confiscated to the Crown," and that monarch granted a lease of West Cheam at the rent of £5 yearly to Ralph Goldsmith. Queen Elizabeth in 1585 granted its reversion to John, Lord Lumley. The pedigrees of the Lumleys are said to be among the oldest in the kingdom, and at Lumley Castle in Durham a collection of sixteen oil paintings of the earliest members of that noble house is, I understand, to be seen.

The Lumleys, too, appear to have been a literary as well as a noble family, for Lady Joan, the first wife of John, Lord Lumley, translated several speeches of Isocrates and the "Iphigenia" of Euripides; and James I. is reported to have purchased their celebrated library. East or Lower Cheam Manor House was about half a mile to the east of Cheam, and was held on lease from the Crown by the Fromond family. Lower Cheam Park now forms part of the site. In 1729 both manors came into the hands of the Duke of Bed-



NONSUCH PALACE.—From an Old Print.

of Cleveland and Southampton in 1730, when very little of this once magnificent structure remained.

But if the palace has been almost entirely obliterated, the park, with its magnificent avenue of trees, remains, and through the kindness of Colonel the Honourable Francis Colborne we have to-day seen at its best this once Royal estate, with the trees in full leafy attire, and the fields radiant and bright ere the hot summer sun has scorched and browned them.

CHEAM.

Cheam, a village of about 1,900 acres, is in the rural deanery of Beddington. In Manning and Bray's "History of Surrey" it is stated that in 1018 "Cheyham" (Cheam) was given by King Athelstan to Christ Church, Canterbury; but Brayley, in his History, says this must be a mistake, as King Athelstan died in A.D. 940. Extracts from a Chronicle of Gervase of Canterbury, which are published in Dugdale's "Monasticon," however, state that in 1018 Mestcham (no doubt Mitcham of to-day) and Cheyham, two "vills," were given by Ethelstan to the monastery of Christ Church. Probably he was a younger son of Ethelred II., and a brother of Edmund Ironside. Domesday, too, mentions that "the Archbishop of Canterbury holds Ceiham for finding provisions for the monks." According to Somner, the Archbishops held the estates of the church until near the close of the eleventh century, when Archbishop Lanfranc divided the

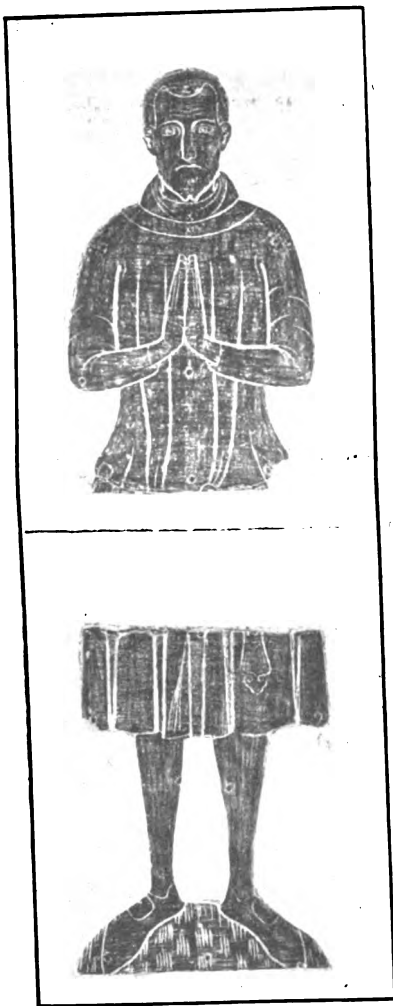
ford, but about the middle of the eighteenth century the Duke sold the manors of both East and West Cheam to the Mr. Edward Northey previously referred to.

CHEAM CHURCH.

Cheam Church is dedicated to St. Dunstan. The old church was built before 1449, of Kentish rag, and in the Early English style. It was demolished in 1864, and the erection of the present church was then commenced. In the tower are a clock and six bells. The sacred edifice contains a nave, north and south aisles, with apsidal chancel. The tower and spire, at the north-west corner, were added in 1870. The walls are faced with red and black brick—giving a somewhat unusual appearance—relieved with white stone, of which the exterior consists. The pillars, of Purbeck marble, are circular and plain; the capitals, however, are more ornate, but the workmanship is somewhat crude. This remark also applies to most of the stained glass windows. The stone font is supported upon short pillars of greenish marble. The rector, the Rev. Henry A. Wansbrough, M.A., of St. John's College, Oxford, was appointed in 1904, the living being in the gift of that College. The register dates from 1538. It is recorded that between 1581 and 1662 no less than five of the six rectors of Cheam became Bishops, one of whom, Lancelot Andrews, was first Bishop of Chichester, and afterwards appointed to the see of Winchester.

LUMLEY CHAPEL.

Detached from the church is the Lumley Chapel, which was taken from the chancel of the old church. It is now kept locked. It contains a monument to Joan (Fitz Alan) Lady Lumley, who died in 1577; a mural monument to her husband, John, Lord Lumley, who passed away in 1600; and also one to Elizabeth, his second wife, with a recumbent effigy. The most notable brass in this beautiful chapel is to Thomas Fromond (1542), Elizabeth (Yerde) his wife, and ten children. The whole of this brass is palimpsest, made up of various fragments. The obverse represents the man, in civil dress, and his wife, kneeling at desks facing each other; behind the former are their six sons, and behind the latter their four daughters, all kneeling. Between the parents is a shield of arms, and below the group an inscription; while above all the Holy Trinity is represented. These fragments, with one exception, date between 1500 and 1520, and are now hung in a wooden frame. Another brass, and most of it in a good state of preservation, is that of a civilian, date 1360. This effigy, the dimension of which is over 4 feet, however, has 8½ inches missing from the middle,



BRASS OF CIVILIAN IN THE LUMLEY CHAPEL, CHEAM.
DATE 1360 A.D.

and the inscription has also gone. The man is attired in a rather loose tunic reaching below the knees. He is girded round the hips with a baldric, which has an ornamental termination. Suspended from the centre of this is a short sword. The sleeves are quite tight and short, not reaching to the wrists, but beneath are short closely-buttoned mittens. Round the throat is a small hood fastened by buttons. The shoes are slightly pointed, and have a strap over the instep. The face, very good, is that of an elderly man with a short bifid beard. Another brass, a demifigure of a civilian of about the same date, bears a striking resemblance to the one just mentioned. This was discovered during the demolition of the church. Another brass of a civilian found at the same time is, however, of a later date (1459), but the inscription is lacking. There are also two brasses, one of John Crompton (1450), and the other to Johanna his wife (1458), the latter wearing a head-dress flattened heart-shape. She has a square face. There is also a brass effigy, only

6½ in. high, of John Yerde, c. 1480, in armour, and two shields, one of which, with Courtenay impaling Yerde, is palimpsest. The third brass is an inscription to Bartholomew Fromond, 1579, with two shields, also palimpsest; and in addition several other tombs of minor importance. The ceiling of this chapel is richly ornamented.

A REMARKABLE BUILDING.

At Cheam the eastern entrance to Nonsuch Park is noticeable. Near the gates is a drinking fountain, erected in 1895, by G. and M. Farmer. A stone cross is placed over the fountain. In walking from the church to the park, on the right, is a somewhat remarkable building, with a low, half-timbered gable end overhanging the pavement.

WHITEHALL.

We pass, too, Whitehall, also known as Maids of Honour House, a timber structure, dating from the time of Henry VIII., in which Queen Elizabeth, when a visitor to Nonsuch Palace, held her Council. Miss Killick, who resides there, was kind enough to allow us to inspect this "Council House." The following is a short description of Whitehall, supplied by Miss Killick: "The house consists of two storeys with rooms in the roof. The whole of the house is timber framed, the ground floor being brick-nogged, and the upper floor having the interspaces filled in with plaster work. The whole of the front (east), side (south), and back (west), except the drawing-room wing, is weather-boarded. The drawing-room wing and north side are rough-cast. An extra thickening of 4½ inches of brickwork has been put outside the ground floor on the west, and portions of the north and south sides of drawing-room wing. The roof is covered with tiles, and the roof timbers are of oak, the ties being curved and resting on a central stiffening beam in ceiling of attics. The windows on north side have been stopped up. The staircase has a fine central wood newel and winding stairs. The floor timbers are of oak, the joists being tenoned into a beam in the centre of the ceiling of the rooms. The lintel of entrance from staircase to passage to room over porch, on first floor, shows signs where tenons of vertical pieces have been mortised into it and pinned, and the posts next staircase at side of passage to room over drawing-room show where a horizontal piece has been tenoned in to the posts, and pinned. In the dining-room are the remains of an inglenook and an oven that opened out of it. The windows in the front of the building and the staircase have the original iron casements, the frames and fittings, and lead glazing. The two angle posts to the front in first floor have angle brackets on the solid inside. The brackets on angle posts on outside on ground floor are not on the solid. Several of the original ledged doors exist with wide vertical planks, the end planks with edges moulded, the middle plank raised."

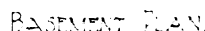
Near by is a vault cut out of the sandstone rock, 27 feet long, 14 feet broad, and 11 feet high, having a descent of twenty-three steps; at the end of this, another flight of steps leads to a smaller vault. It may have been used as a larder for venison when Nonsuch Park was a Royal pleasure. The tradition is that the persecuted Protestants met here in the days of Queen Mary to read the Bible, and that later, when the place was in the possession of the Petre family, it was used as a hiding-place for equally persecuted Roman Catholic priests, when they said Mass during the prevalence of the penal laws. The story so common elsewhere is current here also—that the steps formed the entrance to an underground passage leading to Nonsuch.

THE RECTORY.

The Rectory is a fine old brick house. Until only a few years ago, when it was obliterated, there was an inscription on the outside of the dining-room chimney referring to a Rector of Cheam who was chaplain to Queen Elizabeth and afterwards Bishop of Chichester, no doubt one of the six rectors previously referred to. Some of the walls are covered with tile bricks from the old Ewell pottery, and have probably fulfilled their useful purpose for over three hundred years. Cheam House, built of red brick, has a Classic front.

CHEAM SCHOOL.

Cheam School is probably the oldest private school in England. It first assumed importance about the time of the Great Plague (1665), when several London citizens sent their children to Cheam to be educated by a gentleman who kept a school at "Whitehall House." The present school was built about 1719 by the Rev. Dr. Sanxay, who was succeeded by his son, and who, on becoming Rector of Sutton, resigned it to the Rev. William Gilpin, who has been immortalised as "Dr. Syntax."



DONCASTER MUNICIPAL HIGH SCHOOL FOR GIRLS.

In concluding this rather lengthy paper, which you have so patiently listened to, I must mention that it has been compiled from researches in "Manning and Bray's Surrey," "Greater London," Vol. II., *The Gentleman's Magazine* (1837), the "Homeland Handbooks," and "Highways and Byways of Surrey." I would also acknowledge assistance from Mr. Harradence in suggesting and prospecting last September this ramble with me and an old friend and member, Mr. J. Stanley (now blind); I also thank Mr. T. C. Thatcher, who supplied me with some notes on the screen in St. Mary's Church, Ewell, and the brasses at Cheam; and Mr. Wm. Henderson for the time he has devoted in showing us over St. Mary's Church and the Tower. In addition I must not overlook the kindness of Miss Killick in permitting us to view Whitehall; of the Rev. Henry A. Wansbrough, M.A., for opening to us St. Dunstan's Church and conducting us through the Lumley Chapel at Cheam; of Colonel the Honourable Francis Colborne for permission to drive through the famous avenue in Nonsuch Park, and see the ruins of the Palace in his grounds; and that of Captain Clarence Wiener for permitting us to see the remains of the foundations of the Palace Banqueting Hall on his delightful estate, and for entertaining us with afternoon tea.

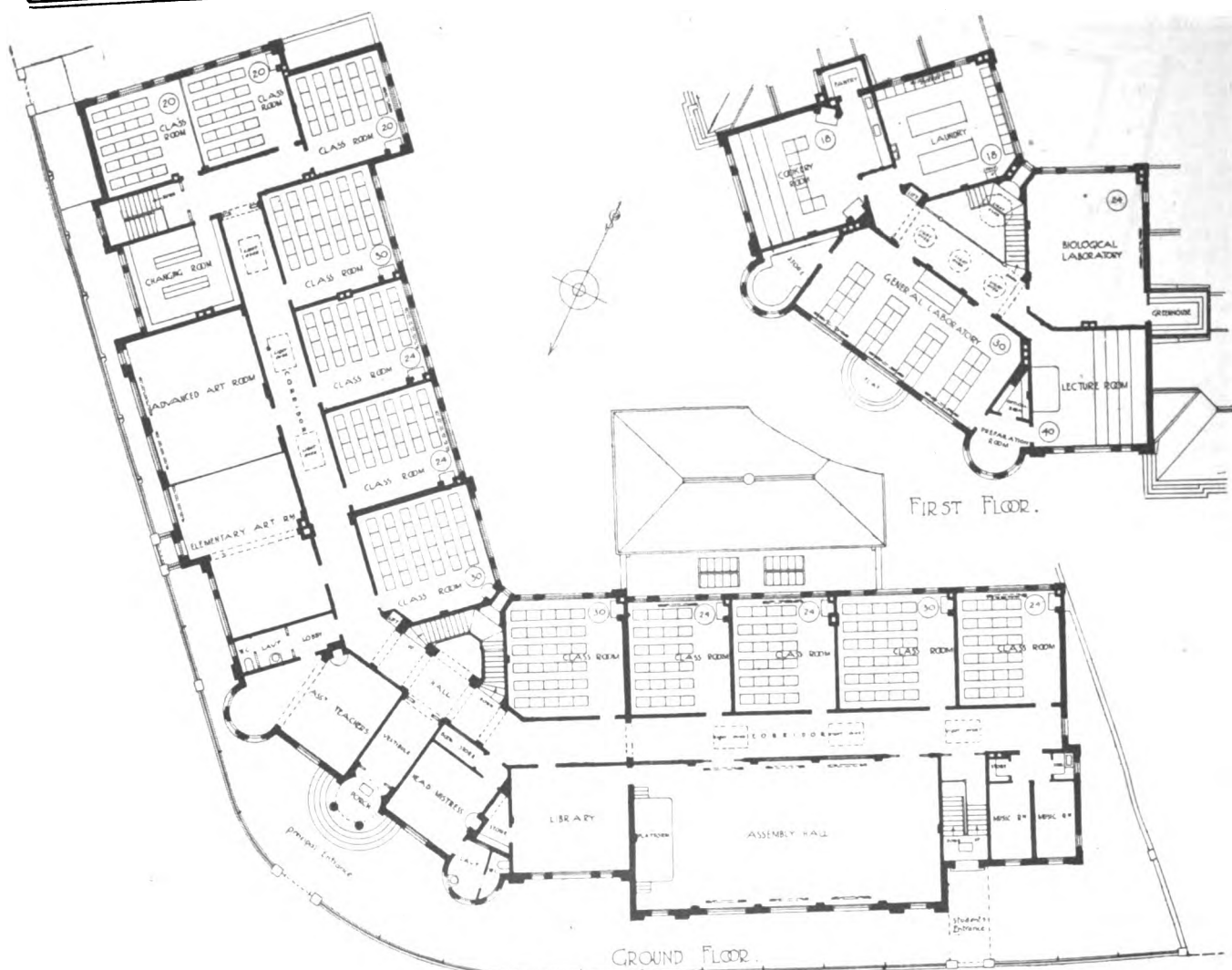
WITH some artists it is always possible to express the universal affirmative: X is always X; Reynolds, Murillo, de Hooch, Boucher (to take examples from different schools) were always to be known by their works. But as much cannot be said for most artists, and particularly at the present day. For the purpose of the present notice, let it be clearly understood that Mr. Clausen, even if apparently exhibiting on various canvases a disregard for his reputation, does

In "The Little Alehouse" we are confronted by a picture, thoroughly Dutch in feeling, with its group of drinkers round the rustic table; and the light from within flooding forwards and bathing the group in a generous splash is particularly effective. A typical Clausen is "A Little Fair Child," and worked in a bright scheme of colour. Contrast with this a water-colour sketch, "Storm Clearing Off"—very dauby indeed, and were it not by a well-known artist it would certainly not obtain the suffrage of the British sheep. This, too, may be predicated of "Looking towards the Hills," whilst "The Tate Gallery," though produced in a nice scheme of colouring, presents us with an almost unrecognisable Tate Gallery.

Speaking generally, Mr. Clausen's oil paintings, as here shown, are preferable to the water-colours, but there are exceptions. "Riverside—Winter Afternoon," with its mists, is very poetic, and this term may be employed also respecting "London Roofs" and "Lambeth Bridge," where, given uninteresting and unpromising subjects, Mr. Clausen has turned them into poems.

And now for the unfortunate contrast; "London-Night," "Sunset across the River," and "Evening Sunlight" are adjectivally indescribable, when we remember from whose brush they issue. To depict the moon as though it were a damaged electrolier is unforgivable. J. M. Turner, as we know, went a bit crazy over solidifying the heavenly lights, and the Impressionist School is rampantly lunatic in that and other ways, but artists of modern repute will be well advised to keep in the accepted track. "The Cottage Garden" is in Mr. Clausen's best style, and this is high praise; here the plastered cottage exterior, the trees, shrubbery, and bright patch of flowers and the human interest, provided in the working-man, all combine in the production of a fine work.

If, before dealing with others, we list those works which we regard as the exquisites of the exhibition, to "The Little



DONCASTER MUNICIPAL HIGH SCHOOL FOR GIRLS.

Alehouse," "Riverside," and "London Roofs" already noticed, we should add "Souvenir of Nauplia," where a curiously effective result is produced by the dark massing of tones in the foreground, with a lightness and brightness beyond, seen through the inframing trees. And we must also include in the list "The Old Gateway," where the young mother, holding her little one in her arms and standing in the open doorway, is bathed in the light from without, which just glances inwards on the threshold.

In "An Old Woman" we are presented with a study of a rugged but not coarsely painted face. "St. Paul's in Fog" is a good water-colour, the unwelcome visitant being well put in. "A Quiet Room" is very attractive, the young girl on the sofa and the brilliant prospect seen through the closed window uniting in a satisfactory ensemble. Mr. Clausen's flower pieces, too, are invariably good.

"Rejoicing after the Rain" is brilliantly clever, the artist having sympathetically caught the effect of the sun's rays darting through the still damp-laden atmosphere. "Winzes Farm" is another good work, and so also is "Cottage in the Trees." A couple of bust studies, "Dorothy" and "Study in Grey," are quite Clausenesque. We had an interesting and animated discussion with our fair companion as to the original of the sketches being one person or separate entities; personally we incline to the belief that one piquant model sat for the two studies.

Very certainly the good work in this exhibition preponderates satisfactorily over the less good and the poor.

ILLUSTRATIONS.

COMPETITION DESIGN FOR THE SEALE-HAYNE COLLEGE, NEWTON ABBOT, DEVON.

This design was submitted by Messrs. Moscrop-Young & Glanfield in an open competition held recently. The drawing shows the main front overlooking the valley. The central

building was the office and rooms of the principal and caretaker, while to the left was the library and to the right the museum. These latter were connected to the students' quarters and administration department by a semi-circular open corridor, as shown on the drawing. The materials suggested were red brick with stone dressings, wood cornice painted white, roofs covered with tiles or green slates, and sash windows.

DONCASTER HIGH SCHOOL FOR GIRLS.

This building occupies a position having easy access from all parts of the town of Doncaster, and is surrounded by open spaces and adjoins the grounds of the Municipal Museum and picture gallery. The accommodation provided is for 300 pupils. Owing to the unequal levels, parts of the building are three storeys in height, but none of the rooms are below the adjoining finished ground levels. The drawings show the general arrangement of the several rooms.

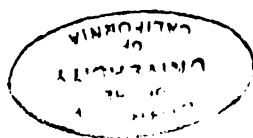
The design was submitted and selected in a limited competition, the assessor being Mr. E. R. Robson. The buildings are faced with red pressed brick and "Marmo," the latter made by the Leeds Fireclay Co., Ltd., the roofs being covered with red Staffordshire tiles.

The architects are Messrs. J. M. Bottomley, Son & Wellburn, of Leeds and Middlesbrough, the contractor Mr. J. T. Wright, of Leeds, and the clerk of works Mr. C. J. Weighell, of Doncaster.

INTERIOR DECORATION.

The illustrations we reproduce have been described by Mr. A. E. Bullock in his series of articles on "Interior Decoration."

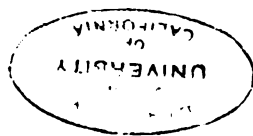
MR HAROLD DICKINSON, A.M.Inst.C.E., &c., of Leeds, has been appointed electrical engineer by the Liverpool Tramways Committee at a commencing salary of £1,000 a year. There were sixty-five candidates.

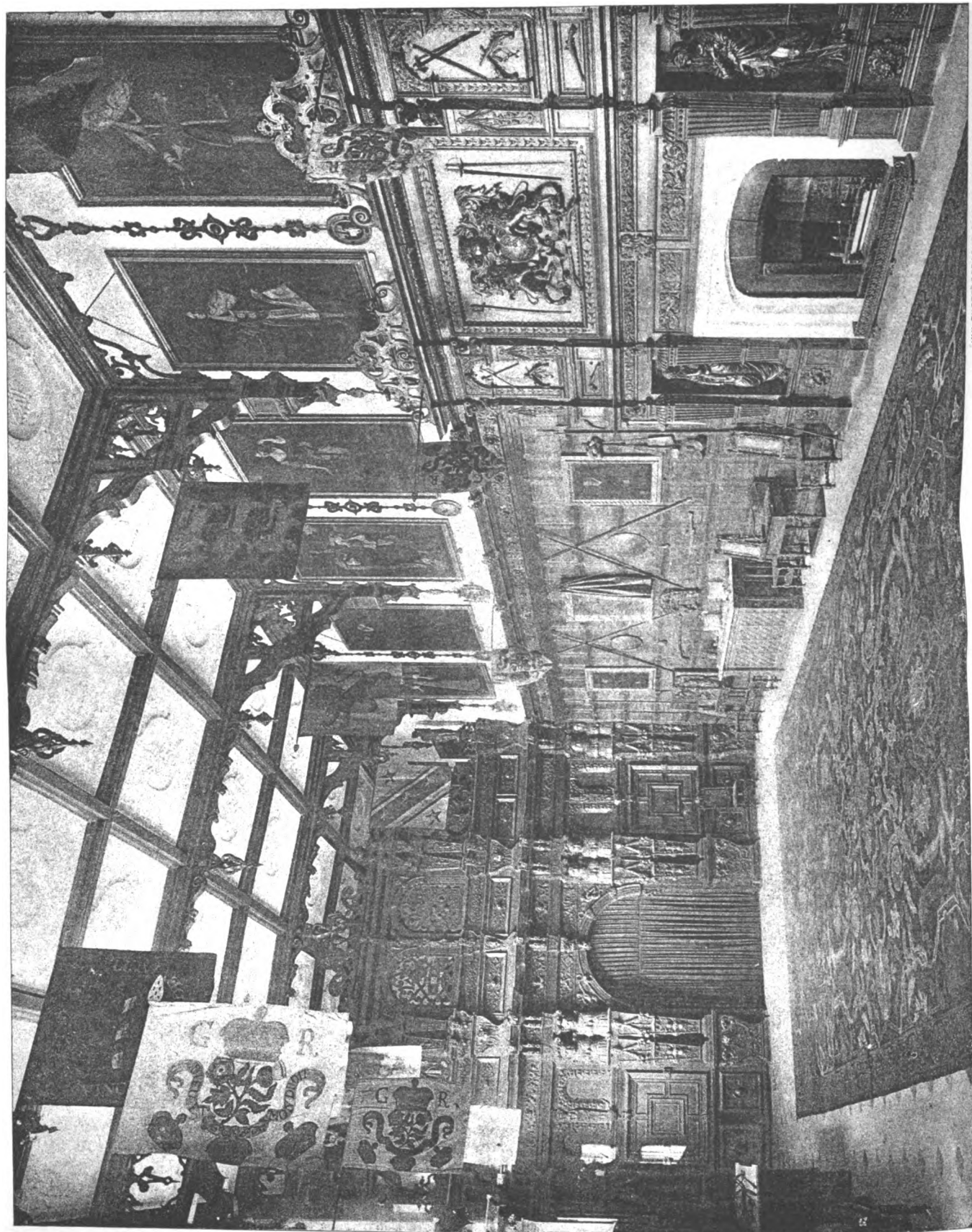




INK PHOTO SPRAGUE & CO. LTD. 70, DEAN STREET, SOHO, W.

DORFOLD HALL: CHIMNEY PIECE IN THE GREAT DRAWING ROOM.



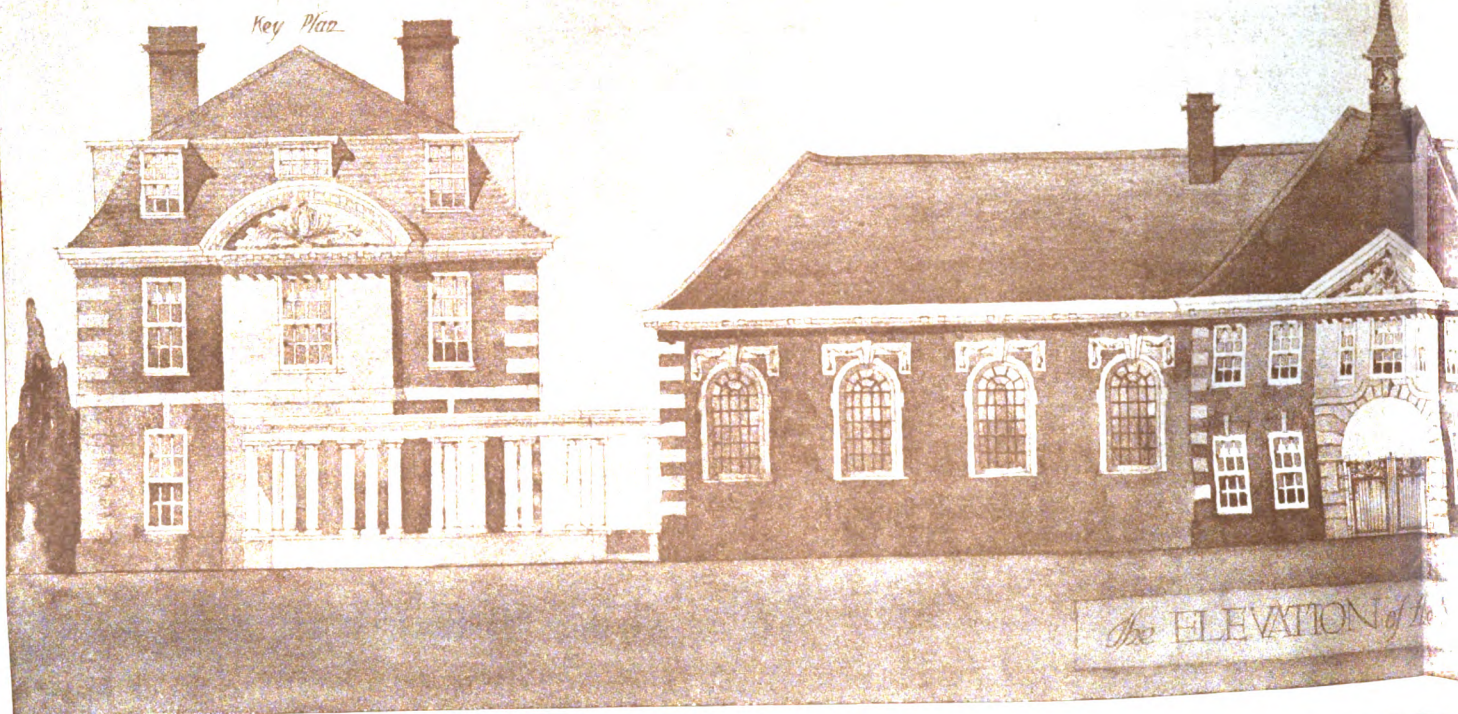
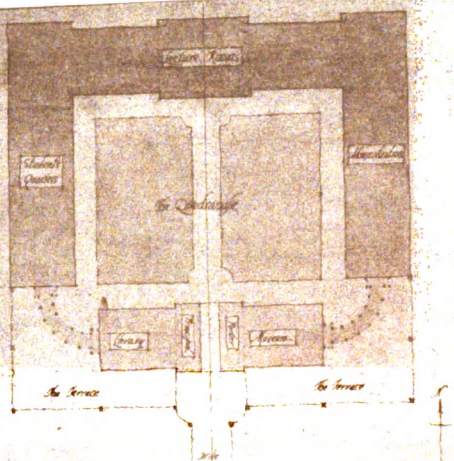


THE PHOTOGRAPH BY SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

AUDLEY END: THE HALL.



DESIGN for the SEALE-HAY at NEWTON ABBOT



25th 1912

THE SEAHAYNE COLLEGE

PLYMOUTH DEVON



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THE CHURCH OF S. MARY, CROSCOMBE, SOMERSET.





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DORFOLD HALL: ENTRANCE TO THE GREAT DRAWING ROOM.



INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—III.

HOUSE OF HANOVER—THE GEORGIAN ERA.

(Continued from page 218.)

MOOR PARK, Hertfordshire, presents throughout a scholarly application of Classic detail. Leoni had been architect to the Elector Palatine, and was thoroughly skilled in his profession when he came to England. The decorations of Moor Park were chiefly entrusted to Sir James Thornhill, who probably directed the work of Sleker and Amiconi. Thornhill brought an action for his fees against Leoni's client, Benjamin Heskin Styles, who seems to have been difficult to please. Thornhill sometimes adopted a method of charging for his paintings by the yard on the basis of £3 for ceilings and £1 or £1 10s. for walls. His arrangement with Styles was probably by contract.

The hall is a particularly fine apartment, upon which the artists have concentrated their chief energy. From floor to ceiling-dome the scheme is complete. The pedimented door casings surmounted with figures are executed in marble, of which material the dado is also composed; the walls are treated with modelled plaster in panels, the pictures, forming part of the decorative theme, having a boldly moulded frame crowned with amorini holding festoons. A gallery runs round the four sides of the hall, the walls of which are painted with figures in niches. The ceiling is painted with a central coffered cove forming a circle, with a cupola in the centre panel treated in perspective. The plaster work to the surrounding soffit is somewhat floriated, the figure work, however, being well executed and in keeping with the remainder. The saloon is entirely painted above the panelled dado, as is also the staircase, both walls, and ceiling. The staircase paintings were executed by Sleker in 1732.

Sir Laurence Dundas employed Cipriani, the fellow-pupil and friend of Bartolozzi, the engraver, on the decorations to the dining-room about 1765, doubtless under the direction of Robert Adam, who carried out several additions to the gardens at this time, notably the fine gate-piers and the tea-house in the grounds, together with the furniture for the dining-room.

Stoneleigh Abbey, Warwickshire, was commenced in 1720—or the same year as Moor Park—by a local architect of the name of Smith (probably William Smith, who assisted James Gibbs upon the Radcliffe Library, Oxford). Externally it has a palatial aspect, having a basement and three upper storeys, treated in the same plane, the whole being crowned by a bold cornice and balustrading. Its loftiness gives it a gaunt air and the appearance of being overwindowed. This portion of the abbey, Mr. Tipping tells us, was built by Edward, the fifth Lord Leigh, replacing a great deal of the old mansion of the seventeenth century, portions of the original Cistercian monastery of the time of Henry II. being still intact.

The entrance hall retains its old Jacobean panelling and late Tudor type of ribbed vaulting to the ceiling, but the note changes immediately one enters the saloon, where the Classic detail is manifest. Here the plasterer is supreme, the pictures and plaques having a gesso treatment. A pair of unicorns in high relief figure repeatedly in the frieze of ornament below the heavy ceiling cornice. There are no wall or ceiling paintings in the scheme, the large central panel of the ceiling containing a finely modelled Classic subject, in which Neptune and Cupid appear with other figures in the clouds. The execution is sympathetic and delicate, the soft shadows and gentle contour of the human forms, with here and there a contrasting sharpness, as the protruding bow of Cupid, the trident of Neptune, or the modelling of some flowers, being very effective.

The room known as "The Velvet Drawing-room" is wainscotted in oak, with an order of fluted Corinthian pilasters of considerable projection from the wall, thus giving a recessed appearance to the intervening spaces. The fittings in these two rooms are a little inappropriately hung; the glass chandelier would be more suitable in the saloon, while the metal candelabra here would befit the panelled treatment of the drawing-room to much greater advantage.

Several inlaid staircases erected about this time indicate a high standard of skill on the part of the joiners. The practice of forming replicas of French interiors brought foreign artisans to this country, many of whom probably obtained employment in cabinet and marquetry work with Chippendale and Carwithan. Burford Priory, the residence of William Lenthall, Speaker of the House of Com-

mons (temp. Charles I.), contains a fine inlaid staircase, while others exist at No. 54 Great Marlborough Street, London, W., the Hall, Glastonbury (1726), and at Claydon House, Buckinghamshire. J. Carwithan's book, containing "Various Kinds of Floor Decoration," appeared in 1738.

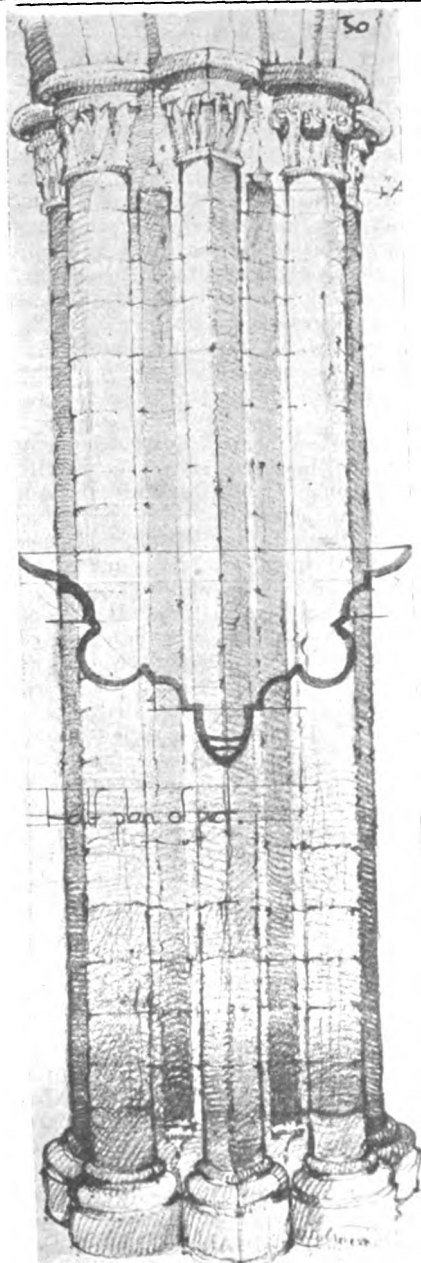
Barnsley Park, Gloucestershire, is the type of house erected by Hawksmoor, having Corinthian pilasters attached to the window-piers, as at Easton Neston. The hall has an open screen leading to the staircase in the manner that formerly existed at Easton Neston. The vaulted coving to the hall ceiling, the iron handrailing to the stairs, and the treatment of the ceiling panel over the staircase are strong points in favour of Hawksmoor's authorship. The building was apparently erected for Brereton Bouchier, who died in 1719, being subsequently inhabited by Henry Perrot, who married Bouchier's daughter. The rainwater heads bear the date 1721.

The dining-room was decorated during the occupation of the house by James Musgrave (son of Sir William Musgrave, rector of Chinnor, Oxfordshire), in the Adam style, the interior grate to the chimney-piece in the oak room being one of the Adam additions after 1778.

Ditchley House, Oxfordshire, brings us in touch with the style of James Gibbs, the architect of the Radcliffe Library, Oxford, who was born in 1674. He was of Scottish descent, and the author of a work on architecture containing "Designs of Buildings and Ornament," which appeared in 1728. Gibbs's attempt to institute a style which he had reduced to a system was doubtless the outcome of the publication of Palladio's "Principles," previously referred to, and his example was followed by subsequent architects. The work certainly added very materially to the library of current architecture, which was not extensive at this time. The character of his details is sensible, being free from mannerisms, based on sound construction and design. Ditchley is a good example of his work, and presents externally a quiet and dignified treatment. There is no order; the entrance door and coigns are rusticated, and the windows have architraves with keystones to the heads. An element of truthful construction pervades Gibbs' work, which, if at times a little too academic, is at least freer than the work of some of his compeers, and superior to the examples of those who were guilty of putting ornament in unnecessary spaces for its own sake. Gibbs saw the value of confining his decorative features to their proper localities, and although such a method tends to isolation of parts, which is, perhaps, one of his greatest faults, Gibbs managed to create a theme by means of repeating features on either side of a common centre with true architectonic propriety.

The interior of the hall at Ditchley has certain features akin to Leoni's treatment of the hall at Moor Park, with this difference—namely, that Gibbs differentiated between the relative importance of certain doorways, carrying the eye to the centre of each wall by increasing the projection of the decorative feature employed, whether it be a niche with statue or a doorway leading into a saloon, by supporting the entablature upon an order and crowning the pediment with sculptured figures. There is little painting in the interior of Ditchley, the architect relying upon the effect of panels and plaques sculptured in semi-relief. A pupil of Scheemaker's, Sir William Cheere, executed some of the chimney-pieces, notably that in the Green Drawing-room, while the hand of Kent is obvious in the design of the overmantels. Kent is also credited with the design of the benches in the hall and three of the paintings there. The chimney-piece here is the work of Stanton and Horsenaille, doubtless from Kent's designs; the overmantel containing the portrait of the second Lord Litchfield is by Aikman. The plaster work of the saloon is of Italian workmanship by Serena and Vassali. The panelling above the dado in the Green Drawing-room savours rather of French design as practised during the early years of Louis XV. Portraits by Sir Peter Lely (died 1680) and Sir Godfrey Kneller (died 1723) are incorporated in the decorative scheme of the White Drawing-room, where Kent's characteristic features are again evident. The ceiling having fallen in 1749, was subsequently reinstated in the prevailing style.

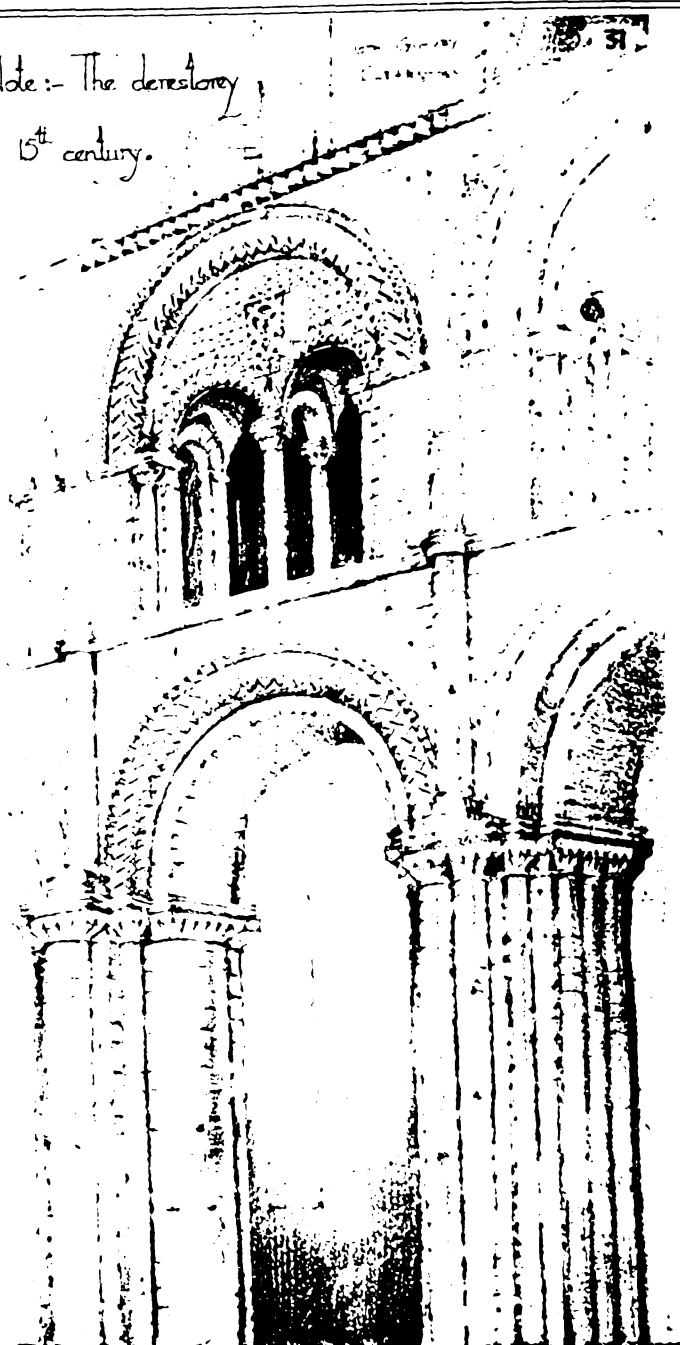
William Kent was born in 1684, and is described in the "National Dictionary of Biography" as a "Painter, Sculptor, Architect, and Landscape Gardener." About 1714 he went to Rome with the son of William Talman, who was the first director of the Society of Antiquaries. John Talman returned to England the following year with Giuseppe Grisoni, and died in 1726. In 1727 Kent published in two volumes "The Designs of Inigo Jones," at the expense of the Earl of Burlington, which was illustrated by



Angle view of Pier

13th Century Pier, Rochester Cathedral, Sussex

Note: - The clerestory is 15th century.



Rochester Cathedral, Kent. One bay of

Norman arcade to Nave. Early 12th century

FROM SKETCHES SUBMITTED BY MR. J. R. LEATHART FOR PUGIN STUDENTSHIP, 1912.

drawings made by Henry Flitcroft and others. Kent's chief decorative work is Houghton, the seat of Sir Robert Walpole; he also executed a staircase at Raynham Hall, Norfolk, for Lord Townshend; altered and decorated Kensington Palace; built the Horse Guards, Whitehall, and Devonshire House, Piccadilly. Of his three journeys to Rome, the last was accomplished in 1730. Kent appears to have been the most versatile of our eighteenth-century artists. He has been called the father of modern gardening, Euston, for the Earl of Grafton, forming one of his principal works in this respect.

William Kent succeeded Wren in the enlargement and decoration of Kensington Palace about 1720. His work here secured the approval of both George I. and George II. He was subsequently appointed "Master Carpenter, Architect, Keeper of the Pictures, and Principal Painter to the Crown, the whole including a pension of £100 a year, which was given him for his works at Kensington, producing (according to Walpole) £600 a year," which is the statement given by Mr. Ernest Law. The chief rooms decorated by Kent include the King's Staircase, the Presence Chamber,

Queen Caroline's Drawing-room, the Cupola room, the King's Drawing-room, the Nursery, and the King's Privy Chamber, the two last mentioned being redecorated in subsequent years.

The King's Staircase had originally been painted by Streater under Wren's instructions. Kent made drastic alterations, even to the windows. The black marble treads and risers and the wrought-iron balustrading, said to be by Jean Tijou, were restored, and are now the only remains of Wren's work. The walls are painted with an order of Ionic columns, the panels between containing arches with figures grouped above the balustrades. The ceiling consists of a large central square painted with a geometrical design in the panel, and having ornamental panels upon the surround. The Presence Chamber contains the original Gibbons chimney-piece, while the windows, doors and ceiling are Kent's work. This latter is quite different to any other work in the Palace by this artist being based upon Raphael's designs in the Vatican. The colours are bright reds and blues on a white ground with certain features gilt. It was painted in 1724, and in design is of the Pompeian character adopted by Giulio Romano and his school.

The ceiling of Queen Caroline's Drawing-room and the King's Drawing-room are of similar composition, having a cove decorated in the French manner and large oval centre for painting. The walls have a low panelled dado, and were lined with old velvet flock paper, which was introduced about this time. The present paper is newer, and is said to be a copy of the old pattern. The Cupola or Cube-room, which connects the two rooms last mentioned, is treated with marble porches to the doors and painted pilasters to the walls leading up to a coffered coved ceiling. The room is 37 feet square, 26 feet to the top of the cornice and 34 feet 7 inches to the top of the cove. This room is exactly as it left Kent's hands, and is in the style he most favoured in work executed for his patron, the Earl of Burlington. Kent was associated with Bridgman in laying out the gardens on the east front of the Palace, including the basin or Round Pond, thereby destroying the fine Dutch gardens of the time of William and Mary. The present Old English sunk garden has superseded much of this work, and, with its lime walk, adds considerable interest, connecting, as it does, the Orangery with the Palace.

Sir Robert Walpole secured the best talent of his day in the building and decorating of his Norfolk mansion. He was one of the nineteen children of Sir Robert Walpole, the member for Castle Rising during the reign of William and Mary. The second Sir Robert, following politically in his father's footsteps, eventually rose to the position of Prime Minister. He had bought largely of South Sea stock, and sold at a good figure before the bursting of the bubble.

The building of Houghton was commenced by Walpole in 1722 from designs by Colin Campbell, the architect of Mere-worth, and author of "Vitruvius Britannicus." Thirteen years were taken to complete it under the directions of Thomas Ripley, the protégé of Walpole, whose brother Horatio employed him concurrently with the building of Wolterton Hall in the same county (1724-30). The former work called forth Pope's satire:

"Heaven visits with a taste the wealthy fool,
And needs no rod but Ripley with his rule."

Ripley was of Yorkshire origin, and, in common with Ware and Flitcroft, was of lowly birth. His advancement, however, was rapid. From clerk of works at the King's Mews, he built the Custom House (burnt 1814); was appointed chief carpenter in succession to Grinling Gibbons; carried out the works above mentioned; built the Admiralty, Whitehall (subsequently refaced by Robert Adam); succeeded Vanbrugh as Comptroller of the Board of Works; became Keeper of his Majesty's roads, gates and bridges; designed the interior and roof of the chapel of Greenwich Hospital (burnt 1779), and eventually inherited through his second wife a fortune of £40,000. In 1758 he died at Hampton Court.

(To be continued.)

REFRONTING BUCKINGHAM PALACE.

It has been a *versata quaestio* for a long period, and of recurrent interest during successive "silly seasons," alternating with such questions as "What shall we do with our boys?" "Ought girls to take off their hats in places of worship?" and the long list of queries whose discussion has so wearied the jaded journal-reader.

"What shall we do with Buckingham Palace?" Whether to be amended or ended, it has never been commended. When the late Queen Victoria ascended the throne the Palace wore a very different guise to its present discredited one. There was no eastern block facing the Mall and enclosing the quadrangle. The Palace, as it then stood, was mainly the work of John Nash, and the only pile blocking the Mall approach to the Palace was Nash's Marble Arch, now so inartistically isolated without regard to axis in Oxford Street.

But a grand improvement scheme was decided upon in those early years of Queen Victoria's married life, and this consisted in removing the Marble Arch and in enclosing the quadrangle, as we now see it. Whereas Nash had used Bath stone for the north, south and west façades, Edward Blore (whether on his own initiative or not we are ignorant) used Caen stone for the new block; and so unsuccessful has been the result that we (in common with the general public) have thought that we were confronted by undistinguished stucco, this effect being aided by the periodical painting to which the fast-decaying stone has been subjected.

Better days are now in store. The Caen stone is to disappear in favour of Portland stone, and an architectural design more in accord with Nash's is to replace Blore's. Sir

Aston Webb, C.B., has been commissioned to prepare the scheme for giving a new face to our old friend; the treatment will be in the Renaissance style, naturally, and, as indicated, will show flat Corinthian pilasters, providing at the same time for overcoming the present deplorable skyline by raising the façade sufficiently to mask the poor roof and chimney stacks.

Sir Aston's task has not, we should imagine, been one of the easiest, for he has had to retain in position and size all the windows and entrances as at present and to build up his design round them; this doubtless accounts for the somewhat insipid effect produced. With a free hand he could have coupled the columns at suitable intervals, but even as it is there is a sense of dignity and proportion, as well as fitness, such as we have learnt to expect in the work of Sir Aston Webb. The introduction of pediments is a great improvement, and the central entrance will certainly be more presentable than in its present garb. There is, in fact, a distinct levelling-up on the whole, but still we consider that Blore's separate treatment of the storeys is more in accord with the ethics of Design than the use of the Colossal Order.

Ornament will be used sparingly, and where used will be in the main heraldic. Sir Aston's idea is apparently to allow the Victoria Memorial to dominate the Palace, whereas we are of opinion that the latter should be the dominant factor.

Messrs. Leslie & Co. are to execute the work, which will be put in hand shortly. The stonework will be prepared in the stoneyard; the stones will be numbered, and everything is to be made ready for fixing before work *in situ* is commenced, so that when the Court has left the Palace during the ensuing year the architect and the builder will collaborate to produce a finished work by the autumn.

FRENCH RENAISSANCE ARCHITECTURE.—II.

THE second of the course of ten public lectures on "French Renaissance Architecture" now being delivered on Thursday evenings at University College, Gower Street, W.C., by Mr. W. H. Ward, M.A., A.R.I.B.A., was entitled "The Beginnings of the Renaissance in France: The Italian Craftsmen, Charles VIII. and Louis XII."

In his introductory lecture Mr. Ward had chiefly dealt with the rise and development of Renaissance in Italy.

A certain infiltration of humanistic ideas into France might be traced, he said, as far back as the early years of the fifteenth century, though it was not till near its close that imported specimens of Italian or Classical art began to exert any marked influence on the surrounding Gothic. No French building contains any trace of Renaissance influence externally before 1494; though the chapel of St. Lazarus in the old cathedral of Marseilles (1479-81) contains Renaissance internal decoration. In 1494 Charles VIII., with a large army, invaded Italy and established himself in the Kingdom of Naples. During their stay of some months the King and his French nobles became enthusiastic about Italian art, engaging Italian craftsmen and sending home portable objects. Twenty-two Italians accompanied Charles back to France in 1495, and were principally employed at the embellishment of his favourite residence, the castle of Amboise. During the following thirty or forty years artists of all sorts came from Italy and settled in the adjacent valley, where they established the School of Amboise or of the Loire.

The architect in a modern sense was a person foreign to French practice up to this time, though in Italy he had existed for a century or more. French critics used to hold that the Renaissance buildings of France owed their origin entirely, or almost entirely, to Frenchmen. Now, however, it is generally admitted that the Italians had a preponderant share in the movement during at least the first generation. For the first few years there would be little to distinguish the new type of building from the old, but for the activity of the Italian stone carvers in executing wall decoration. By some twenty years after the Italian campaign, French builders had begun to assimilate the new ideas, and there arose a crowd of buildings with Gothic bodies clothed in Renaissance garments. The Italians were mostly from Northern Italy, and brought with them the local exuberant type of design with much minute ornament.

The influence of the Renaissance on planning is visible in efforts towards regularity and symmetry. It is occasionally manifested also in an increase of horizontal emphasis and a reversion to the Roman system of combined

arch and lintel composition. But at first the effects are usually confined to less essential elements than the general design, consisting of the introduction of Italian ornament or of Italian features, or even only parts of features into compositions otherwise conceived on wholly Gothic lines. The Gothic elements are usually those which do the work, which form the carrying or enclosing members; while the Renaissance elements are the carried and enclosed members.

In addition to these stylistic changes there were others, such as were due to a great increase in the number and size of windows and galleries, especially on the outer faces of buildings, or to the introduction or revival of crafts and materials.

Mr. Ward then dealt somewhat minutely with the castle of Blois, and more especially with the wing erected by Louis XII. between 1498-1502. Another important building described was the great château of Gaillon, now only remaining in fragments. The Hôtel d'Abbaye at Blois is a well-preserved specimen of its class, chiefly dating from about 1512. The street front is almost entirely Gothic, but in the court almost every part except the dormers has Renaissance detail.

Towards the end of the reign of Louis XII., i.e. 1515, the fusion was a fairly complete one. In the new reign everything contributed to the persistence of the process of translation in which native detail and feature was expressed in the new language. The new king, Francis I., and his courtiers lost no opportunity of engaging Italian assistance in the embellishment of the innumerable residences then commenced. Side by side with its picturesqueness the greatest interest of the architecture of Francois Premier is in the beauty and refinement of its detail and in the ingenuity of its translations of various native features into the new form language imported from Italy.

Mr. Ward concluded his lecture by discussing a few of the principal examples of the styles.

INSTITUTION OF MUNICIPAL ENGINEERS.

THE annual general meeting of the above Society was held on October 11 and 12 in London. On the afternoon of the first day four papers were presented for discussion. The first, by Mr. F. W. Platt, dealt with "The Modernising of Building By-laws," and was reported in our issue of last week.

Mr. H. C. H. Shenton (Member) then presented his paper on "The Local Government Report on the Intercepting Trap."

The report of the Departmental Committee appointed by the President of the Local Government Board to inquire and report with regard to the use of the intercepting trap in house drains deserves the close attention of the municipal engineer, and may be usefully discussed. It is probable that as a result of the evidence brought forward the Local Government Board will alter their Model By-laws to the extent of permitting, or even of demanding, the omission of intercepting traps in house drains. It is not the author's object to review the report, but merely to start a discussion among members of the municipal engineering profession, who collectively must possess far more knowledge of the subject than any other body of men.

The sanitary expert and the engineer in private practice view the matter from a special standpoint. Their knowledge is to a great extent limited to the drainage of the better-class houses, and they have, as a rule, a very limited knowledge of the conditions which exist in the mass of houses of the working classes. Neither have they the drainage of whole towns and districts under their control. They are, therefore, more likely to be surprised at the conclusions of the report than those men who have for years made a daily study of the conditions which exist in the sewers and drains of a town taken as a whole.

The private engineer who is a sanitary expert may design systems of drains perfectly, and may see to it that these are absolutely well constructed, properly ventilated and flushed. Moreover, he will very likely be able to see that they are cleaned periodically, and that they are frequently inspected. He may take special steps to avoid the troubles which are mentioned in the report. He may regard the blocking of an intercepting trap on his system as a thing never likely to occur, and, moreover, he will, without doubt, take such steps as will prevent any possibility of nuisance or danger to health, even if the trap does get clogged.

It is also quite reasonable to imagine that the owner of property who has spent so much money on his drainage

system would object to allow the sewers, which are not as clean as his drains, to be ventilated through them, but such cases are the exception and not the rule. The sanitary expert is better acquainted with these cases than with the drainage system of ordinary houses, and arguments in favour of the intercepting trap, which are based on the existence of the perfect system, designed regardless of cost, have practically no bearing upon the present case.

A considerable section of the report is devoted to the demonstration of the fact that the importance of sewer ventilation, and even of drain ventilation, is not as great as is generally imagined. Apparently there is no reason to omit the intercepting trap for the better ventilation of sewers. We are told that "If, therefore, the objection to the intercepting trap rested solely or mainly on its interference with sewer ventilation, we should be inclined to question the importance of such an objection."

It is, moreover, evident that if sewer gas is noxious, we do not want outlets close to our houses. If, on the other hand, the sewers do not require this ventilation, one great argument in favour of the abolition of the intercepting trap falls to the ground.

There also appears to be no doubt that the intercepting trap is effective, for one of the conclusions contains the statement that "it seems to be established that the trap does serve as an effectual barrier to the entry of sewer air into the house drain, which is the fundamental advantage claimed for it. It is not liable to be forced and rendered useless, as has been supposed to be the case, by pressure of air from the sewer."

There is, however, one great and absolute objection to the trap, and that is its liability to become stopped up. The evidence brought forward in the report that this is so is overwhelming, and herein lies the need for alteration in the general practice. It is unnecessary at a meeting of municipal engineers to dwell upon the dangers resulting from a stopped drain. It would, however, be interesting to receive fresh evidence from the members present as to the prevalence of the stoppage of traps.

There is one point with which the report deals somewhat too lightly in the author's opinion, and that is the value of the trap as a barrier against rats. The report tells us that Mr. Patten Barber gave evidence to the effect that he had seen rats chased into the inspection chamber of a drain, where they escaped into the sewer through the trap, and conversely that Mr. Woods, sanitary inspector of Willesden, saw three or four rats come up from a sewer through an intercepting trap.

The author has recently had experience in Kensington of rats coming up through holes in the ground on the sewer side of a house interceptor. The examination proved that the connection was an old brick barrel of a defective nature, through which the sewer rats came. Although it was evident that the rats came up close to the interceptor, it did not appear that they had entered the house drains. The connection has now been repaired, and it has been assumed that the trap will exclude the rats from the house drains. If rats come through traps, how is it that they are practically unknown in London houses except where the drains are untrapped? In the author's memory, in the days when intercepting traps were rare, there was another trap which was very much in evidence—viz., the domestic rat-trap, which was as common then in our homes as the domestic mouse-trap is now. To what is the change attributable?

Again, though the author has frequently seen rats in sewers, he has never, during twenty years' experience on and off of house drains, seen a rat on the house side of the interceptor, though in untrapped drains he has seen them.

The fact that rats have been known to pass through traps under certain conditions does not prove that the trap is, under ordinary circumstances, an ineffective barrier. For instance, cows have been known to jump over fences, cats to swim across water, fishes to pass over land, and so forth. It may be argued that the presence of rats in a tight drain, properly trapped at the gullies, is less objectionable than a blocked drain, but this presupposes that the trapped gullies are effective barriers. If the intercepting trap is not an effective barrier, neither is the gully nor water-closet trap, and there is therefore every reason to expect that where there are many rats in the sewer, they will come into the houses. We know from experience that this is not so. The inefficiency of the intercepting trap as a barrier against rats, as stated in this report, is therefore a point upon which further evidence is desirable.

Another question, and perhaps the most important of all,

is the manner in which to act when it is finally established that intercepting traps are to be done away with. The Model By-laws having been altered, and the local authority having decided to act upon them, what will then be the position? Houses situated in positions far apart will have to be drained. Are these houses alone to be new points at which the sewers are to be ventilated? It may well be that in a town where there are many houses without intercepting traps, the ample ventilation given prevents the likelihood of any nuisance due to the escape of an unduly large volume of sewer gas or smell at one point, but when, say, one house drain on a long length of sewer is to be made to ventilate that sewer, may there not be a considerable nuisance at that point? It is common experience that when a new system of sewers is put into operation, smells occur at unexpected points. Smell escapes and is noticeable at some open cover, and the inhabitants are not slow to complain. This is quite as likely to happen at an open cover near a vent shaft as elsewhere. Theoretical principles do not seem to prevent the inlet ventilator from acting as an outlet, or to prevent the bulk of the smell issuing at some point not intended instead of at several ventilators placed for its special accommodation. Is not the same thing very likely to occur if one or two house vent pipes are used for sewer ventilation at houses, and may not the municipal engineer have to deal with complaints imaginary or otherwise, from local residents who are alarmed? The author, having had considerable trouble from objections raised to purely imaginary smells from sewer vent shafts, cannot avoid the impression that there must be possibilities of trouble for the municipal engineer in the application of the new method.

Again, would it be possible to remove all the traps in the town? It would be easy to make them inoperative as traps by removing the cleaning eyes, but this would not do away with the chief danger—viz., that of stoppage. However, it would be desirable to remove all cleaning eyes as a start, rather than to make a few house drain vent pipes the only new sewer ventilators.

The chief point, therefore, which the author wishes to raise for discussion is how best to apply the teachings of the report.

Mr. Baldwin Latham, M.Inst.C.E., in opening the short discussion on Mr. Shenton's paper, confessed that he had not yet read very carefully through the Local Government report. In the course of his practice he had put in many thousands of intercepting traps and had never known one of them to stop up. The intercepting trap which has an abrupt fall into it could never, in his opinion, fail; there were at least three different makes of which this could be said. Rats were never found in a properly constructed drain. He would like to know if a rat could withstand a pail of hot water poured down the drain. The question of rats has arisen in brick sewers which have become broken. The sewer air has been shown to be purer and freer from bacteria than the air in a street. It sometimes happened that the rain-water pipes were connected with the house drains; in that case the air from the sewer would pass into the houses if there was no intercepting trap.

Mr. H. Percy Boulnois, M.Inst.C.E., said that he had been an advocate all his life for the use of the intercepting trap, consequently the Local Government report came upon him as somewhat of a bombshell when he found that after careful investigation the committee had come to the conclusion that the trap was not only useless but was practically dangerous. The indictment against the trap was that the fresh air inlet became a foul-air outlet and a positive danger to the inhabitants of the house. An answer to this is that if the inlet does smell it is acting as a detective, inasmuch as it shows there must be something wrong with the drain or trap. A graver indictment is that it chokes, and that the drain itself becomes choked, and that the inhabitants are not aware of it while the soil gets saturated. But one must remember that very careful experiments were carried out, which showed that the trap did accumulate a great deal of solid matter passing through the drain; but it also showed conclusively that all kinds of traps retained from 42 to 79 per cent. of solid matter. That might be so; but was it not possible that if there had been used a greater flush of water that would not have occurred? If the drain cannot remove the solid matter it is not surprising that the trap cannot. It was rather a large order for the Committee to suggest that the house drain should become a ventilator. The Committee are saying that the trap is useless. The question of rats was important because these animals had been accused of spreading disease. In each case in which the rat had passed through traps it had been actuated by fear

and did a courageous thing as a consequence. He (the speaker) felt certain that a trap on a drain would exclude rats under normal conditions. One of the most important parts of the enquiry was into the chemistry of the sewer air. The committee have declared that the air of a sewer is harmless, while the air of the drain might be exceedingly dangerous. The alleged reason for the alleged difference is in the splashes. But splashes were exceedingly difficult to avoid. If the trap is to be omitted he would like to know how they were to proceed in the future. The committee said very properly that iron drains should be substituted for stoneware drains. Undoubtedly if the whole drainage of a town was composed of iron pipes with proper seals, &c., then it was possible there would be no harm from the absence of intercepting traps. But if stoneware traps were employed he personally would rather have a trap between himself and the sewer.

Mr. E. A. Strickland, borough surveyor, Windsor, pointed out that another difficulty was that one could not be sure that all the houses were disconnected. There must in this matter be fair treatment all round.

Mr. A. J. Martin said that the law has taxed the householder and the rate-payer for a number of over-lapping precautions which not only have not been required but in some cases defeated the object in view. In laying down sewers one endeavoured to make them sound, to provide abundant flushing facilities, and also ventilators so as to keep the air pure. But after doing all this we put down an appliance apparently expressly designed to cause the air to stagnate. The arguments in favour of the trap advanced in the past have largely been based on the conditions which the trap itself has brought about. The trap is put in because the air is likely to be offensive; but the only stagnation is in that very trap. If all the traps were abolished there was no reason why the air should not be harmless. People seemed to imagine that by writing "outlet" and "inlet" on certain pipes they were quite safe. A good deal had been made of the argument that it was unfair to ask the householder to allow his drain to ventilate the public sewer. That seemed to him to be a very narrow view, for if it was not the householder's business whose business was it? There was no more hardship in calling on the householder to ventilate the public sewer than in taking his money to do so. The fact was lost sight of that the air must go somewhere; but it was a risky thing to have large volumes of foul air collected unless one knew exactly where they were going to. Was it not better for the foul air to leave the sewers by a number of different points than in small quantities by one or two? However, the country was too apt to swing from one extremity to another. If they did away with the trap in the new system they should not do so in the old ones.

THE AUTUMN EXHIBITION OF THE OLD DUDLEY ART SOCIETY.

IN renewing our art criticisms after a period of recuperation of tone and energy, our unjaded powers shall direct their earliest attention to the display of this well-known water-colour society in the equally well-known gallery of the Alpine Club.

Here we find a collection of works to the number of nearly two hundred and fifty, and of these we are attracted by the respectable percentage of thirty. There is very little that is actually poor, and if a large proportion is indifferent and mediocre it is what must be expected where some eighty or more artists combine for one exhibition.

The President, Mr. L. B. Bruhl, is represented by eight canvases—a characteristic display, half Dutch and half English, and of these we will select one of each class for notice. "The Weeper's Tower, Rotterdam," charms by its happy harmonious colouring and good atmospheric effect; whilst "Winter's Mantle, Battlesbridge," with its snow-clad river banks and its half-dismantled buildings similarly clad, is in the artist's more familiar style. Mr. Walter Stacey, Vice-president, is also well represented, and of his six exhibits two call for notice. "A Devonshire Cobbler" shows a well-modelled figure, the brushwork throughout being good, and "Winter in the West Country," though portraying some indifferent sheep, is in other respects good, the haze in the atmosphere being vigorously put in. Of the four exhibits of the other Vice-president, Mr. R. S. Standen, it suffices to refer to "Il Torrone, Valle Crosia, Borighera" (No. 31); its colouring is distinctly pretty (the adjective, by the way, which seems to express most frequently the colouring throughout this exhibition), but this picture shows

no breadth of treatment, and the brushwork is finicky. Mr. T. A. de Moleyns is the most fully represented numerically with a series of Riviera sketches, undoubtedly the best being some of the Mentone views. "Eventide," worked from a quiet and sympathetic palette, "Bellevue Hotel," "Amirante," and "Annunciata" are all good and pleasantly recall the work of Miss Ella du Cane; this lady's work is, curiously enough, brought to mind by various of the pictures displayed. In this connection mention may be made of "Villa Capella, Bordighera," by Miss Edith Adie, who shows two other works also, of which "Oleanders, Lake Como," deserves warm approbation for its colour-scheme, its modulation, and its atmosphere all in combination. To Mrs. Rose Hake's five works it is not possible to give the cachet of great merit; she has well depicted the bloom in "August Heather, below Farragon," but her Westminster Abbey sketches are not pleasant; the stained-glass window is the insistent feature in "The Nave," whereas in our dear Abbey a pleasing note is that the stained glass fills in the various views and vistas, without obtruding itself. Contrast Mrs. Hake's "Gate of Henry VII.'s Chapel" with Mr. J. Cafe's Abbey etchings. "In the Cloisters" and "Entrance to the Deanery and Jerusalem Chamber" are both good, the former especially being a vivid representation of what we know so well. His third and really imposing exhibit, "Moonlight in St. Paul's Cathedral," is a masterpiece, showing the effect of environment upon the artist and his sense of the fitness of time and place; the light, just breaking on the cornice and thus relieving the blue-black gloom, needs to be seen to be appreciated fully.

Mr. Nigel B. Severn has, amongst his six exhibits, one work, "Portuguese Fishing Boats off Cape Roca," which stands side by side in merit with the last-mentioned picture. This is, as it happens, also a moonlit scene, where the cold luminary presents its orb above and its light glancing over the water beneath, with a red glimmering as of a glow-worm, set in the background cottage. "St. Giles', Oxford," by the same artist, is good in neutrals, a rather pleasant change from the prevailing treatment in primaries and secondaries. Miss Brace's "Primroses" is sympathetically treated, which cannot be said for her "Roses." Mr. Le Roy's technique in "Vibré" is too cardboardy, but "An Old Brittany Town," showing a narrow street, is good brushwork. We like Mr. W. G. Whittington's four works; "The Tower Bridge" is very delicate and presents quite the local effect; "A Herring Drifter" and "A Fine Breeze" are really breezy, and in these and "Lowestoft" the artist exhibits his mastery over his subjects. Miss Hall has a good piece in "Wintry Weather," with its flock of sheep in the foreground and the declining sun in the far distance; in "Reaping" her three horses are well modelled and stand out forcibly, but the growing corn is very poor brushwork. Mr. E. W. Hereford shows a masterly treatment of skies, but lacks breadth of touch, though in "Tintern Abbey" this defect is less pronounced.

Mr. J. Carlisle shows a lamentable ignorance of cloud-modelling, his daubs in this direction being inexcusably poor; he, however, redeems by "A Highland Water Party" and "Loch Etive," a pair of pretty little sketches, what would be otherwise an unfavourable impression of his work. The bold rolling clouds, pierced by rugged peaks, in Mr. H. R. Donne's "The Mine Glacier, Fer Perles Valley," are very good, this picture being a striking contrast to the same artist's "The Blumisals," where the effect is as of a picture such as one might see on a grocer's canister. Mr. Powell in "The Christchurch Gate, Canterbury," and "Patricbourne, Kent," shows his powers, though the colouring of the houses in the former is perhaps exaggerated. Mr. Holroyd is too hard in his touch and does not grasp the value of part closing of the eyes when portraying what he sees.

Mr. Topham Davidson has a poetic morceau in "The Rising Morn," with its grey rocks, its moored boats, and the quiet lapping waves; his "Late Autumn, Jersey," shows an effective twilight. Mr. R. Walters has produced the desired effect in "On the Wye at Sunset," and "The Evening Hour" is a pretty piece with good brushwork for the trees, the sky, and the water. Mr. Parkyn has a curious mannerism in his work—an albinosque treatment, it may almost be called. Mr. F. Parks is cardboardy in "St. Davids Cathedral," but has a very delicate piece in another Welsh sketch, "Lower Fishguard." Mr. F. J. Aldridge's "In the North Sea," showing a boat heeling heavily under storm-capped skies, is excellent.

Mr. C. Marrable is fond of Dunbar and has studied the harbour to good effect. Miss Hopton's "Fishing Boat off Palma di Mallorca" is very good in blues and greys. Miss M. E. Howard's "Delphiniums" is one of the few good

flower pieces. Mrs. M. J. Moberley has two good dog studies, "Who Said Sugar?" being very vigorous. Of all Mr. Coleridge's works it is necessary to call attention to "Salisbury" alone, which presents all the quiet atmospheric effect of provincial England down in the West. Mr. George Marks' "Gorse in Bloom" is good all through.

Miss Evelyn White's "Low Tide" is good brushwork, and Mr. Rooke in "The Falls of Leny, in Spate, Perthshire," is meritorious. "Rahere's Tomb, St. Bartholomew's," by Miss Hughes, is very poor indeed; and Miss Hartley, in "An Old Farmyard," is much too woolly. The last picture in the exhibition must not be passed by without approving notice; this is Mr. H. Terry's "Darby and Joan," which is pathetically pretty in treatment and colouring. The model for Darby is perfectly lovable, and all our quarrel is with the cat, which we trust is achieving its ninth incarnation, for the sake of our future peace of mind.

ANCIENT AND MODERN FABLES ILLUSTRATED BY MR. ARTHUR RACKHAM.

EVERYONE loves Æsop and his Fables, and it may be supposed that "Peter Pan" is beloved of a most respectable majority; and all these fables have evidently inspired Mr. Arthur Rackham, whose work in illustration now decorates one of the Leicester Galleries.

A more delightful little cherub than the artist's Peter or a more attractive little girl than Maimie it would be hard to conceive. The method of depicting the humanised trees and flowers is very expressive, and in regarding "The Paths that have made themselves" there is apparent quite a poetic touch in the effect of light in the sky, of distance, of atmosphere.

And what praise is adequate for the colour harmonies? Edmund Dulac and Arthur Rackham would seem to have studied in the same school (to judge by their work), and to be the two best exponents of the teaching as regards colouring.

Some of the illustrations are *en silhouette*, amongst others the tailpiece to "Peter Pan," where the children's figures are all that can be desired, the dogs alone being indifferent. "Solomon Caw," as presented by Mr. Rackham, recalls to mind the technique of Joseph Crowhall, and this is even more apparent in some of the illustrations to "Æsop," such as "The Fox and the Crow" (but the section of Dutch cheese is gigantic), "The Crow and the Pitcher" (the latter poorly drawn), "The Cat and the Cock," and "The Cock and the Jewel." The expressive faces of the two rodents in "The Town Mouse and the Country Mouse" are magnificent—the one so town-jaded, the other so rustic.

In some instances the treatment is rather trifling, such as "The Lion and the Gnat," "The Bull and the Gnat," "The Hound and the Hare," and "The Monkey Dancing" (the latter *en silhouette*). And in referring to silhouette illustrations, those for "The Man, the Boy, and the Ass" are excellent.

As with "Peter Pan," Mr. Rackham has also humanised some tree sketches on show, some of them particularly clever, others more ordinary. The order of merit is to be conferred upon "The Two Pots" (where "Uncle Toby" is exquisite), "The Gnat Caught by the Spider" (a very powerful drawing), "The Wolf and the Crane," "The Wolf and the Goat" and "The Bear and the Fox."

The finest all-round drawing is, in our opinion, "The Shipwrecked Man and the Sea," showing the spirits of the malign powers in contrast with the insignificant mortal, to whose indifferent eyes are displayed the pearly treasures of the ocean-bed.

Though some of the drawings exhibit signs of roughness or incompleteness in treatment, yet the general level of excellence in "Peter Pan" and Æsop's "Fables" is remarkable.

THE HYGIENIC ASPECTS OF GAS FOR HEATING AND LIGHTING.*

(Concluded from page 216.)

MISTAKEN IDEAS.

THERE are still among us people who believe that carbon dioxide is the root of all hygienic evil, and that as it is so much heavier than air than it can be poured from one vessel to another—they believe that the forces which cause air to

* A Paper by Professor Vivian B. Lewes, F.C.S., F.I.C., read on October 8 at Manchester before the British Commercial Gas Association.

rise will be insufficient to cause the ascension of the products of combustion and respiration. Let me, however, remind those individuals of the old fire balloon, in which the combustion of some burning spirit on a sponge renders the products—the same as from gas—so light that not only do they ascend but carry up the weight of the balloon envelope, with a margin to spare. It is upon this power of setting air in motion and promoting diffusion that gas bases a good deal of its hygienic superiority as an illuminant; while the sterilising effect of the flame and the trace of sulphurous acid in the products gives the reduction in organic matter and bacteria that forms the second desideratum of Dr. Leonard Hill's perfect system of ventilation.

As the amount of heat for a unit of light given by incandescent gas lighting is so far in excess of that given by the electric incandescent lamp, and as water vapour is one of the chief products of the combustion of gas, it may appear to some that the coolness and proper degree of relative moisture insisted on by Dr. Hill can be obtained only by lighting by electricity; while Dr. Hill himself has shown that an electric fan will give the necessary movement. Apart from the cost of using extra current for a fan to complete the work of a source of light that is already dearer than gas, it must be remembered that the air under these conditions becomes so befouled with decomposing organic matter as to be unpleasant to the nose, even if not actually injurious to health; and we have no desire to live in an atmosphere having an odour of the kind that greets us when we reach the booking-office of a tube station from the comparatively fresh air of the street. Certainly we rapidly get acclimatised to it, and in a few minutes our nose ceases to be worried by it, but the esprit de corps is still there, although electric light, electric fan, blower and pump have all been working their hardest to keep the air fresh, and there is certainly no stagnation.

THE PROPER DEGREE OF AIR MOISTURE.

The proper degree of relative moisture in the air is a question which it is not easy for the uninitiated to grasp, as it is hard to realise that a certain weight of water vapour may at one temperature saturate the air completely and render it so oppressive to live in that health is seriously affected, while a difference in temperature might make the same weight of water the right quantity for carrying on life under the best conditions. The important factor is not the amount of water vapour present per cubic foot of air, but the percentage of the amount the air is able to contain at the particular temperature. If the percentage is too high, then evaporation from the body is checked; but if sufficiently removed from the point of saturation, then the functions of the body are unimpaired and health unaffected.

In a closed room we have three sources of aqueous vapour to consider—the amount present in the outside air that is supplied to the room, the amount given off by the occupants of the room, and the amount contributed by the illuminants; while in a fireless room the temperature will be governed by the exterior temperature, the heat given by the bodies of the occupants, and the illuminants. The amount given by these sources other than the exterior air per hour may be tabulated approximately for 60 to 70 candles illumination as—

	British Thermal Units.		Water Vapour.
	Gross.	Net.	
Man	446	340	700 grains (Rideal)
4 cubic feet incandescent gas	2,140	2,080	1,600
3 lamps, incandescent electric	900	900	

So that, taking heat and water vapour as the factors of motion that lead to currents and diffusion, it is seen that in a room lighted by one incandescent mantle and containing two people we have 2,700 B.Th.U. and 3,000 grains of water vapour to act as a motive force, against 1,580 B.Th.U. and 1,400 grains of water vapour when electric lamps are employed. Inasmuch as neither temperature nor humidity show any great difference at the breathing level whichever source of illumination is used, it is evident that the force has been expended on diffusion—a point made perfectly clear by the superior organic purity and carbon dioxide content of the breathing space.

I have no desire to make any invidious remarks with regard to electric lighting. There is no doubt as to its convenience and decorative value in houses built with proper regard to ventilation, in which lofty rooms, ceiling ventilators, and Tobin tubes amply safeguard the health of the inhabitants; but I do strongly protest against the methods of the electrician who attempts to displace gas as an illuminant in the homes of the large proportion (where small

rooms devoid of any scheme of ventilation other than those provided by the fire-place and jerrybuilders are the rule) by false statements as to the dangers of gas, which, under these conditions, is an invaluable engine of ventilation.

THE VARIED USES OF GAS.

Gas fires, cookers, water-heaters, and engines have at the present time all been developed to a point which makes a consideration of their hygienic value of the greatest importance, as ever since Bunsen, in the early fifties, gave us the atmospheric burner, in which non-luminous combustion of the gas is obtained and the blackening of articles heated in the flame is avoided, gas has progressed so steadily for heat and power, as well as for lighting, that nowadays its use for these purposes is nearly as great as for illumination.

GAS FIRES AND VENTILATION.

The open fire place consuming coal has always been a representation of one of our great English characteristics. Never mind its wastefulness and its polluting effects on the outer air, it is a good companion; it heats a room in the right way—that is, by radiant heat and not by convection; and the enormous volumes of air drawn up the chimney by the draught make it a valuable engine of ventilation. One of the great prejudices which has always existed among sanitarians against the gas-fire has been the supposition that its installation would do away with the ventilating effect of the open fire, and so render the air more unhealthy, and, further, that the cost of the gas-fire was considerably greater than that of coal.

COST COMPARISON.

The last objection, which certainly is one of the most serious in hindering the adoption of gas-fires, is based largely upon fallacious methods of estimating the comparative costs of the two, as when reckoned, as is usually done, by the cost and number of British thermal units present in a pound of coal and in a cubic foot of coal gas, the gas, roughly, would cost about five times as much as the coal for the same number of units. When, however, we take into consideration the efficiency of the grate, we find that the difference practically disappears. With a modern gas-stove we can obtain not only the warming of our rooms under conditions every whit as hygienic as with a coal-fire, but at a cost which is practically the same, as when coal is burnt in an open grate only one-fifth of the heat units present in it are conveyed to the air of the room, while with the modern gas-stove nearly four times as great an efficiency can be obtained. The balance in cost is amply made up for by the cleanliness in use, by the absence of dust and labour entailed in the supply of fuel to the coal-fire, and by the economy of lighting the fire only when it is wanted and turning it out when done with—to say nothing of the fact that it goes out only when the tap is turned off, and that the noise and effort of stoking are dispensed with.

HYGIENIC CLAIMS OF THE GAS-FIRE.

In considering the hygienic claims of the gas-stove, we must take into account, first, the way in which the heat passes from the stove to the room and its occupants. With the coal-fire this is done almost entirely by radiant heat, which does not directly raise the temperature of the air, but radiates heat to the floor, walls and furniture, which absorb it and again slowly part with a portion of their heat to the air in contact with them; so that the walls and other solid bodies in the room are at a higher temperature than the air. There is no doubt as to this being the true method of heating. It is the way that Nature heats the world, and the sun's rays beating down through the atmosphere leave it fresh and unwarmed; but as they reach solid matter they rapidly raise its temperature, and the solids, in turn, by convection gradually warm the air.

Apart from its being much more healthy to breathe cool than hot air, there is another important point to consider. The normal temperature of the body is 98° Fahr., and this temperature is maintained by the slow combustion processes going on in the body. By the laws of radiation, a heated surface parts with its heat more or less rapidly, according to the temperature of the surrounding bodies; so that if a person be sitting in a room filled with warm air, but near to a wall colder than the air, his body will rapidly part with heat by radiation to the wall, and a sensation of chill is the result. With the open fire this is never the case, as the radiant heat from the fire heats the walls of the room to a temperature higher than that of the air.

When, however, a room is heated by hot-water pipes, steam, or any of the central methods of heating now so popular, the temperature is raised by convection—that is,

the air in contact with the heating surface is raised in temperature, expands and sets up convection currents, this taking place until the whole of the air in the building is raised to a given temperature. Heating of this kind, however, always suffers from the drawback that the air is hotter than the walls and other solid bodies, so that, although a room may feel oppressively hot, a chill may easily result from the body radiating heat to the walls.

SUPERIORITY OF GAS-FIRE OVER COAL-FIRE.

In the best forms of gas-fire, the burning gas heats radiating material in such a way that a very large percentage of the heat of the gas is converted into radiant heat, and passes into the room in the same way that the heat from a clear coal-fire does; while the convection heat, which used to be the chief source of the heat of the gas-fire has been reduced to a minimum. The efficiency of the stoves has been so increased that over 60 per cent. of the total heat in the gas is utilised, so that, in heating effect, the gas-stove is far superior to the coal-fire.

The mistake was made in the early days of the gas-stove of filling up the space between the exit flue and the fireplace completely, so that all the air from the room had to be drawn through the radiant mass in the grate, this leading not only to diminished temperature, but also to a decrease in the amount of air withdrawn from the room. If, however, the flue of the gas-stove be carried some little distance up the chimney and a space be left around it, this will act as the injector of the Bunsen burner, and withdraw from the room nearly as large a volume of air as the open fire does, while the cooling effect of the gases and air upon the radiant material is avoided.

Probably the most valuable work on the hygienic aspect of gas heating and lighting is to be found in some work done by Dr. F. S. Toogood on the ventilation of the wards of the Lewisham Infirmary, in which he carefully compared the condition of the air in a ward heated by gas-fires and illuminated by incandescent burners with that of a ward heated by open coal-fires and without artificial illumination. He proved conclusively not only that gas consumed in modern incandescent burners can be used for lighting without any detriment to health, but that, in fact, it assisted ventilation by the increased circulation of the air, and that a gas-fire, properly constructed and fixed, not only does not vitiate the air, but is a valuable adjunct to the ventilation of the room, apart from its manifest advantages in reliability, avoidance of noise, freedom from dust, and economy in use.

His work is of great interest, as he compares the percentage of humidity in a ward lighted by incandescent burners with one in which there was no artificial illumination, and in which the air was warmed by an open coal-fire, and found that in both cases the humidity of the air in the room was something like 20 per cent. less than in the exterior air.

With the old forms of gas-stove, in which the mistake was made of trying to utilise most of the heat value of the gas by causing it to heat air, which by convection raised the temperature of the air and not of the solids in the room, the percentage of humidity was so decreased that it caused rapid evaporation from plants and the occupants of the room, producing drooping in the former and discomfort, dry lips, and smarting eyes in the latter; and the cry that gas heating "dried the air" was raised against its use, while bowls and saucers of water were placed in front of the stove to add water vapour to the air, and so decrease the discomfort.

The cause of this trouble disappeared when once it was recognised that radiant heat was the only true and hygienic method of heating; and in the modern gas-stove the amount of radiant heat has been increased to the maximum attainable, and convection plays a very small part.

WHERE CONVECTED HEAT MAY BE USED.

While with justice we condemn utterly all systems of heating which raise the temperature of the air by convection alone, we must not lose sight of the fact that when rooms or halls of large cubical content have to be warmed, convection, which as a chief or primary source of heating should never be used, may yet play a very useful rôle as a secondary adjunct to radiant heat. Where convected heat is used as a sole method of heating, the air has to be raised to a high temperature to ensure its carrying the heat over a large area; and this excessive heating makes it so hungry for moisture that the discomforts incidental to the old gas-stove are reproduced, and we have conditions of the most unhygienic character. For raising the temperature of the air of a large space two or three degrees, to aid and hasten

the effect of radiant heat, what I may call "low temperature convection" is often of the greatest value.

Take, for example, a large schoolroom on a cold winter's day. No single gas or coal fire could supply the radiant heat to warm the whole room to the right degree before it was occupied in the morning; but if radiators—so-called because they give nothing but convected heat—are fixed in two or more places below the windows, they will give the air the two or three degrees necessary to enable the radiant heat of the gas-fire to quickly complete its work of raising the temperature of the solids in the room, and yet in no way will detract from the hygienic conditions. For such a purpose gas-heated steam or hot-water radiators answer perfectly well.

In a climate such as ours, in which we often run the gauntlet of the four seasons in twenty-four hours, the ease and quickness with which a gas-heating system of the right type can be brought into play is no small asset in its favour; and although in the abstract we may be willing to accept Dr. Leonard Hill's dictum that cold and hunger are thoroughly hygienic, we also feel that, unless specially trained to enjoy them, a middle course is the best for us individually.

CONCLUDING REMARKS.

I think I have said enough to show that coal gas as now used in the incandescent burner and modern gas-fire is by far the most hygienic illuminating and heating agent that we possess for rich and poor alike, and that the dwelling-house, school and workshop are all rendered more healthy by its action, while the change that has taken place in the atmosphere of our large towns during the past ten years—the lessening of smoke, the rarity of bad fogs, and the increase in the hours during which the sky can be seen—bear eloquent testimony to the work already done by the partial displacement of the coal-fire by the gas-stove in helping to rid the country of the smoke curse.

BOOKS RECEIVED.

- "Early Christian and Byzantine Architecture." By Edith A. Browne. Containing forty-eight full-page illustrations reproduced from photographs. In the series of "Great Buildings and How to Enjoy Them." (London: Adam & Charles Black.)
- "Successful Houses and How to Build Them." By Charles E. White, jun., M.A.I.A., &c. (New York: The Macmillan Company. London: Messrs. Macmillan & Co., Ltd. 8s. 6d. net.)
- "Great Engravers." Marcantonio and Italian engravers and etchers of the sixteenth century. (London: William Heinemann. 2s. 6d. net.)
- "Great Engravers." Hans Holbein the Younger, his Old Testament illustrations, Dance of Death and other woodcuts. (London: William Heinemann. 2s. 6d. net.)

COMPETITION NEWS.

CAMBRIDGE.—Mr. P. Morley Horder, F.R.I.B.A., 148 New Bond Street, W., has been successful in the limited competition for new buildings in connection with Cheshunt College. Sir Aston Webb, C.B., R.A., acted as assessor. Eight architects were invited to compete. The work will cost about £20,000.

CANADA.—The Imperial trade correspondent at Winnipeg reports with reference to a competition for a Town Hall at Winnipeg, to be erected at an estimated cost of 3,000,000 dollars (about £616,600), that the competition in question is open to architects both in Canada and the United Kingdom. Applications for full particulars should be made to the Mayor, R. D. Waugh, Esq., City Hall, Winnipeg.

DUBLIN.—Mr. Henry T. Hare, F.R.I.B.A., the assessor, has reported to the Buildings Committee of University College, Dublin, the result of the competition for designs for the proposed new college buildings, and has made his award as follows:—(1) Messrs. Dillon & Butler, Dublin; (2) Messrs. Arthur & H. H. Hill, Cork; (3) Mr. Thomas J. Cullen, Dublin. The competition was limited to architects living and practising in Ireland.

NEWCASTLE.—The Town Council have authorised their Housing Committee to advertise and offer for open competition three prizes of £50, £30, and £20 respectively for sketch (pencil) plans for the laying out upon model cottage lines of the 80 acres of land on their Walker Estate.

The Architect.

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FORTHCOMING EVENTS.

Monday, November 4.

Royal Institute of British Architects: President's Opening Address at 8.30 P.M.

Tuesday, November 5.

Institution of Civil Engineers: President's Opening Address and presentation of medals.

Wednesday, November 6.

Nottingham Architectural Society: Exhibition and Criticism of "Constructional Details and Testimonies of Study" by Mr. W. R. Gleave, A.R.I.B.A., at 8 P.M.

Institute of Sanitary Engineers: Paper on "Meteorology and Public Health" by Mr. W. Marriott, F.R.Inst.Soc., at 8 P.M.

Royal Archaeological Institute: Paper on "The Walled Town of Aigues Mortes" by Mr. C. H. Bothamley, M.Sc., at 4.30 P.M.

Thursday, November 7.

London University: Course of Lectures on "French Renaissance Architecture" by Mr. W. H. Ward, M.A., F.R.I.B.A., at University College, London, at 6 P.M. Lecture 5.

Architectural Association Camera Sketch and Debate Club (Novices' Night): Papers by Mr. H. Bart Tunnard and Mr. H. E. Moss at 8 P.M.

JOINTLESS FLOORS.

THE obvious advantages of a floor which shall be absolutely jointless and which can be laid *in situ* to any shape of plan has led to this form of construction being widely adopted by architects since the introduction, some few years ago, of magnesian cement and the realisation of its remarkable properties as a matrix for setting in combination with almost any form of aggregate. Unfortunately the experiences which have resulted from the use of these floors have frequently been unsatisfactory.

Disintegration of the floor material itself, deterioration of the concrete foundation, and, above all, deleterious action upon iron and steel have all been troubles which have accrued from the use of some of the many forms of jointless floor which have been placed upon the market within recent years.

The causes of these failures have not always been identical, for the materials of jointless floors have been varied by different manufacturers. For the most part the aggregate has been sawdust or wood fibre, but other substances have also been used, asbestos amongst them. On the other hand, Portland cement has been used for the matrix, sometimes alone, sometimes mixed with a magnesian cement. The disintegration of the floor itself has generally been due to unwise experimenting with various materials for aggregate and matrix.

There is no doubt that a floor can be made of sawdust and Portland cement, but it requires particular care and exactitude in the proportioning and preparation of the two materials, and mischief may be done by the addition of colouring matter of an unsuitable nature, so that it is distinctly difficult for the manufacturer to rightly proportion his aggregate, his colouring material, and his matrix. When he uses magnesian cement for the binding material of the floors the magnesium chloride has, frequently, a seriously injurious effect upon concrete, iron, and steel, and to this we are inclined to attribute the greater number of failures that have occurred in the use of jointless floors of modern types which have recently superseded the older method of Portland cement rendering on concrete. It is not surprising that many architects, after bitter experience, have formed a determination to have nothing more to do with the modern jointless floor.

We have, however, made the acquaintance of such a floor which we think may be used with confidence. This is manufactured and laid by Messrs. Broadfoot and Co., of Glasgow, under the trade name of "Teakoid," and

in its preparation the manufacturers appear to us to have solved the two great difficulties (1) of producing a permanent and satisfactory floor; (2) of preventing the ingredients of the floor from acting deleteriously upon its support, whether of concrete or iron; and we have made a careful examination and test of the floor and also of the underlay which is used by the manufacturers to prevent the injurious action of magnesium chloride when used as a constituent of the matrix. We find that, although the floor is not free from tendency to wear, this occurs evenly and imperceptibly without disintegration of the surface or cracking where the support is inflexible.

This material has been used in several vessels of the Allan Line, in some of which for a period of upwards of three years it has stood the wear and tear of exceptional hard usage by the peculiar nature of the traffic which these steamers carry. From Scotland to America the floors laid with "Teakoid" are subjected to the roughness of third-class emigrants, Poles, Lithuanians, and other low-grade nationalities.

On the return voyage the cabin fittings are removed and the vessel becomes a cattle ship. A floor which will stand the wear for three years of the roughest class of emigrants and cattle has a *prima facie* claim to durability.

We have also seen examples laid five-eighths of an inch thick on an old wood floor, where it showed only a few regularly disposed cracks due to the deflection of its support. In another instance the flooring had been laid only a month and was sufficiently hard and successfully resisting the wear and tear of a metal working shop, where acids, paraffin and other oils were constantly being spilt.

The manufacturers appear to have solved also the problem of selecting appropriate and non-injurious colouring material, and have produced a wide range of tints which can be employed either as uniform masses or with veined and mottled distribution, producing much of the effect of marble.

To prevent disintegration of concrete and detrimental action on iron and steel when used as a foundation for the floor the manufacturers employ a liquid preparation as an underlay which by reaction with magnesium chloride forms a stable and inert compound, thus preventing injurious action by the chloride, so that this serious cause of trouble is eliminated. On all grounds, therefore, we consider that in "Teakoid" we have a jointless flooring material that may be used with confidence in its durability.

NOTES AND COMMENTS.

THE difficulty of doing justice all round in dealing with ancient monuments is making itself felt in the consideration by the Joint Committee of the House of Lords and House of Commons of the three Bills now before Parliament, which have been introduced for providing for the better protection of ancient monuments in this country. The Duke of Rutland as a representative owner of ancient monuments naturally raised various objections, and in particular objected to one Government body being able to force the sale of a monument or building at an arbitrary price fixed by another Government body. He urged that a monument might be of no intrinsic value at one time, but from competition of expert investors it might in a short time become of enormous value. This clearly refers to the eccentricities of the "old master" market, the development of which has focussed the attention of the public upon the necessity of protecting our ancient monuments from the pecuniary temptation offered to their owners by the fictitious values so adroitly exploited by dealers in old masters and other antiques. We can understand that owners are reluctant to sell to the nation at their intrinsic value property for which a fictitious price may be obtained, when the superfluous dollars of Chicago are seeking an object of exchange. The ethics of property is, however, too large a subject for us to discuss in this column.

Mr. Thackeray Turner, in his evidence before the Joint Committee, made a very true answer to the objections that have been raised by some of the Bishops to the inclusion of ecclesiastical buildings amongst ancient monuments, whose preservation should be provided for by statute. He said that the Church had all the apparatus for guarding churches and ecclesiastical buildings from injury, but the Church authorities did not put them in force. Undoubtedly considerable damage had been done in recent times in a large number of cases by structural alterations and demolitions, and he gave as a notable instance Puddleton Church, in Dorset. If the ecclesiastical authorities did not, or would not, do their duty in this respect he would have some Government body which would do it for them.

The rapid development of the Doncaster Coal Field seems to have been too much for the Town Planning activities of the South Yorkshire District and Urban Councils. Although eighteen months have elapsed since a Town Planning Conference was held at the Mansion House at Doncaster, to consider the desirability of forming a scheme for the whole of the Doncaster district, nothing in the way of concerted action seems to have been taken, and everybody is waiting for somebody else to give them a lead. The responsible authorities have now no time to lose in the provision of healthy and well-planned villages and townships that will soon be springing up like mushrooms around them. They have, too, a golden opportunity in having what is, in effect, a virgin country to build upon.

The peculiar difficulties of Town Planning become evident when a scheme arrives at the stage of a Local Government Board Inquiry, as has been shown by that held on the application of the Birmingham City Council for approval of their East Birmingham Town Planning scheme. The scheme allots certain zones for different classes and numbers of houses to the acre and certain spaces for factory sites and other spaces for allotments. Then come objections from various owners that on one ground or another they are being hardly dealt with by the compulsory allocation of their property to a specific line of development. Again we have the big question of the ethics of property coming into consideration, and the public weal has to be brought into line and harmonised as far as possible with the rights of the owners.

We are pleased to note in our contemporary *The Irish Builder* that it is an admitted fact that a most rapid and substantial revival has recently taken place in the building trade in Dublin, and there is a general air of briskness and prosperity that the trade has not seen for at least a decade past; most of the builders are very busy; unemployment in the building trades has almost disappeared, and all signs indicate a continuance of this briskness. The Dublin building trade has passed through a period of unexampled depression, and it is to be hoped, now that the tide has turned, that it may decidedly flow in the direction of a long period of real prosperity. We wish the same could be said of the building trade in London or in any other large city in England.

The medical officer for Merionethshire, Dr. Robert T. Edwards, in his annual report invites the assistance of the clergy in denouncing the owners of slum property who make their incomes out of unhealthy houses at the expense of losing valuable lives, and supports his indictment of the insufficient attention given by the churches to the health of the community by a reference to the defective ventilation which often characterises our places of worship. The members of the congregation, he says, are often rebuked by the preacher for showing signs of indifference to his sermons by falling asleep, and, if the truth was only known, this somnolent condition of the brain is not due to a lack of interest in the service, but to a poisoned condition of one's mental activity through breathing the impure atmosphere of a badly-ventilated building.

We regret to note that the controversy in Liverpool over the podium of St. George's Hall is rapidly deteriorating into a slanging match, and whilst we sympathise with those who desire to preserve the integrity of the podium we think that they are doing immense harm to their cause by their undignified attacks on their opponents, and we are not surprised at the reprisals thereby provoked. It is a matter of the deepest regret that the question is no longer one of æsthetic propriety but of party politics. Even so, it is a pity that the worst features of a political contest should be introduced into the discussion. Even as a matter of tactics it is surely inadvisable for the defenders of the podium to attempt to retrieve the defeat of their æsthetic arguments by a resort to the methods of an American presidential contest.

KENSINGTON AND KENSINGTON PALACE.*

THE former village or hamlet of Kensington (now designated the Royal Borough of Kensington) has to-day become a part almost of central London. It existed in the Conqueror's time, and the manor was granted by him to Alban de Vere created later Earl of Oxford. There was a church there, which was granted by de Vere in Henry the First's time for the use of the Monastery of Abingdon, in which Abbey his second son was buried—at a later date some disputes arose between Abingdon and Colne (Essex), where a branch monastery had been set up, as to control over the Kensington Church, resulting in the living being placed at the disposal of the Bishop of London. Westminster was the nearest village on the side towards London, separated from it by fields and meadows extending from the river to the westward highway from London to Kensington and Hammersmith, and beyond this northwards to the other westward highway leading to Uxbridge, through which meadows meandered streams making their way to the Thames. One of these, called the Westbourne, drained the area of Paddington and probably also that of districts much further northward, coming through the locality we now know as Bayswater; it crossed the intervening meadows (now Hyde Park and Kensington Gardens) in which it expanded into various ponds, some say as many as eleven, and generally produced a marshy and reedy condition of the ground in its course. Near its crossing over the Uxbridge Road was

* Read at a meeting of the Upper Norwood Athenæum by Mr. Frederick Higgs.

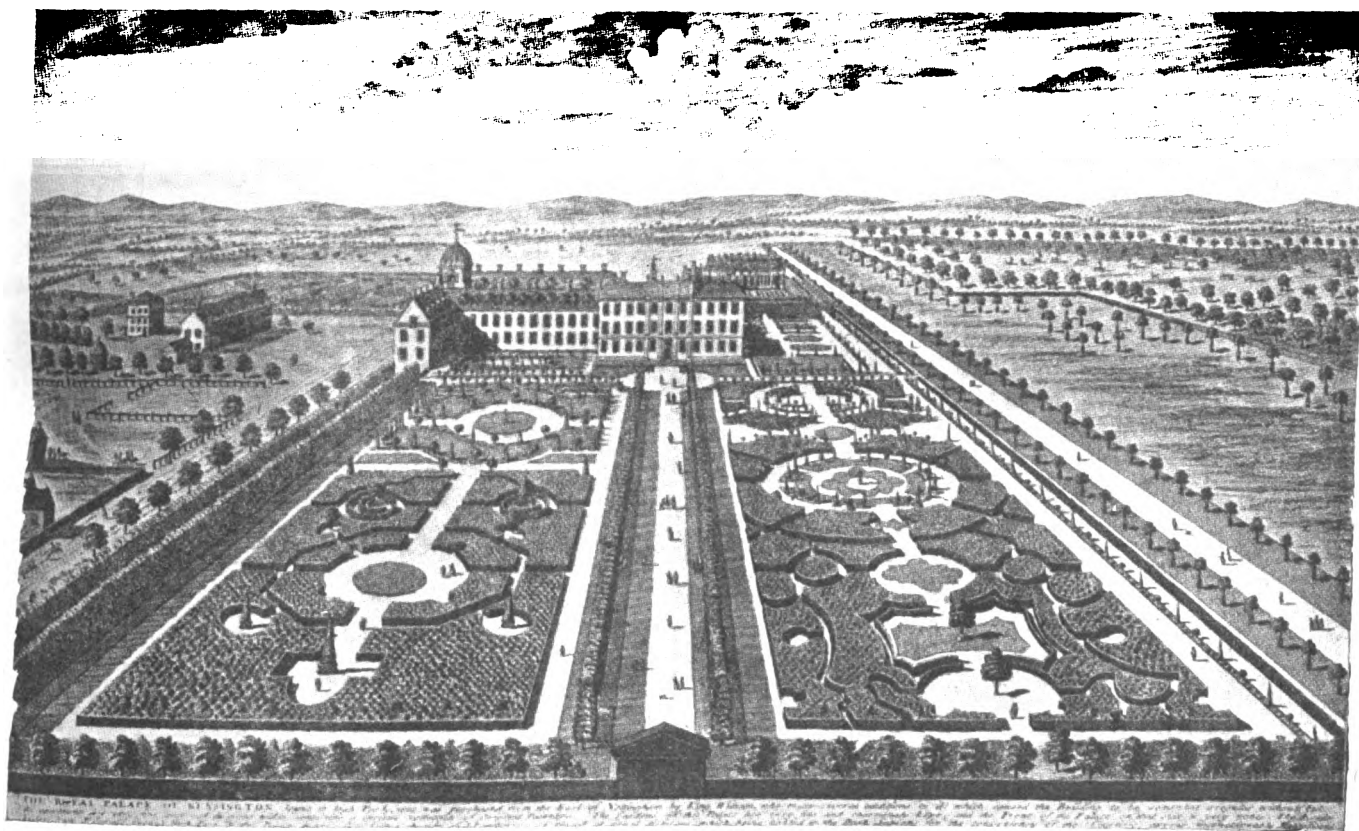
probably a pond by the roadside, and the manorial rights thereabouts belonging (see Domesday) to one Bainiardus, or Baynard, it took the name of Baynard's watering, since corrupted into Bayswater, a title now applied to the whole district. At its southern end it crossed the highway to Kensington, and a bridge was there erected and called Knights-bridge, it is said owing to an encounter which was fought thereabouts between certain bold knights of early times. The thoroughfare from Hyde Park Corner to Brompton Road is still called by that name.

There appears to have been some springs existing in or about these meadows, as it is recorded that Edward the Confessor granted the use of some to his college of St. Peter's, Westminster. The site of these springs is indicated to-day by a pedestal having a suitable inscription standing near the north end of the great dam, and as late as 1663 Charles the Second granted a concession for 99 years at 6s 8d. per annum to one Thomas Hawes to use, perhaps the same spring which may have been alienated at the time of the dissolution in 1553. This person at his death, left the rights to the poor in certain parishes, viz.:—St. Martins-in-the-fields, Watford, Berkhamstead and others; but, in 1731, George the Second bought up the unexpired term of this lease for £2,500. The meadows bounded by the Kensington

foggy atmosphere of Whitehall, which was probably additionally distasteful by reason of its tragic Stuart associations. He succeeded in buying for £18,900 "Nottingham House," a moderate-sized but comfortable mansion at Kensington's eastern end, with 150 acres of park land attached thereto. This property had belonged for a generation or two to a family named Finch, one of whom (Sir Heneage), Lord Chancellor, created Earl of Nottingham, erected the mansion. His son and successor, Daniel Finch, the second Earl, sold it to the Crown. The King at once set to work upon alterations and improvements, under the direction of Sir Christopher Wren, with Nicholas Hawksmore as clerk of works. These continued for some seven years, involving an expenditure of something like £100,000 upon the building works alone. Considerable misfortune seemed to have hampered the progress, as in November 1689 one of the new buildings collapsed, killing seven or eight of the workmen, while two years later a fire occurred, causing damage to the tune of £6,000.

Wren's work, as we shall see in due course, exhibits his usual excellence of detail and proportion: it is quiet, solid, and good.

Queen Mary was constantly on the spot, superintending the work, and apparently had a narrow escape from injury



KENSINGTON PALACE AND GARDENS temp. QUEEN ANNE.

Road on the south; Tyburn Lane (now known as Park Lane), on the east; and Uxbridge Road, on the north, had been acquired, nobody knows quite how, by Henry VIII. for a Royal riding or hunting ground, and at the beginning of the sixteenth century were, as described above, pleasant meadows through which flowed the stream which, with springs, served as a water supply. On Cromwell's accession to power the land (known as Hyde Park), being considered Royal property and, therefore, useless, was put up to auction in four or five lots, but upon the Restoration in 1660 "the King came to his own again," and the purchasers were in turn dispossessed.

The highways both south and north were, like most other roads of early times, ill-made, only passable for vehicles in dry weather, mostly bog and morass in such wet seasons as we have been having lately, and quite without lights. They were, therefore, dangerous to use after dark to the lonely and unarmed traveller, being happy hunting grounds for the "gentlemen of the road."

Such was the condition of the district and approaches when, on the accession of William and Mary in 1689, the former sought for a new residence conveniently near to the Government at Westminster, but away from the smoky and

in the accident before mentioned, as it is recorded that she was in the apartment but a short while before. She also wrote to the King, who was busy subduing rebellious Ireland, "The outside is fiddling work, and takes up much more time than can be imagined." It is ever thus with clients, Royal or otherwise. At the same time William and Mary were busy re-modelling, to a large extent, the gardens in the Dutch style; and, in order to make a fitting approach to the new Palace, and to avoid the difficulties and dangers of the public highway, the King caused to be formed a broad new straight road from the south-east corner of Hyde Park, marked on some of the old maps as King's New Road, on the line now taken by the Carriage Road.

The inscription upon Kip's engraving of the Palace and gardens in Queen Anne's time says: "The avenue leading from St. James's through Hyde Park to the Palace is very grand; on each side of it lanthorns (stated by one authority to number 200) are placed at equal distances, which, being lighted in the dark seasons for the convenience of the courtiers, appear inconceivably magnificent."

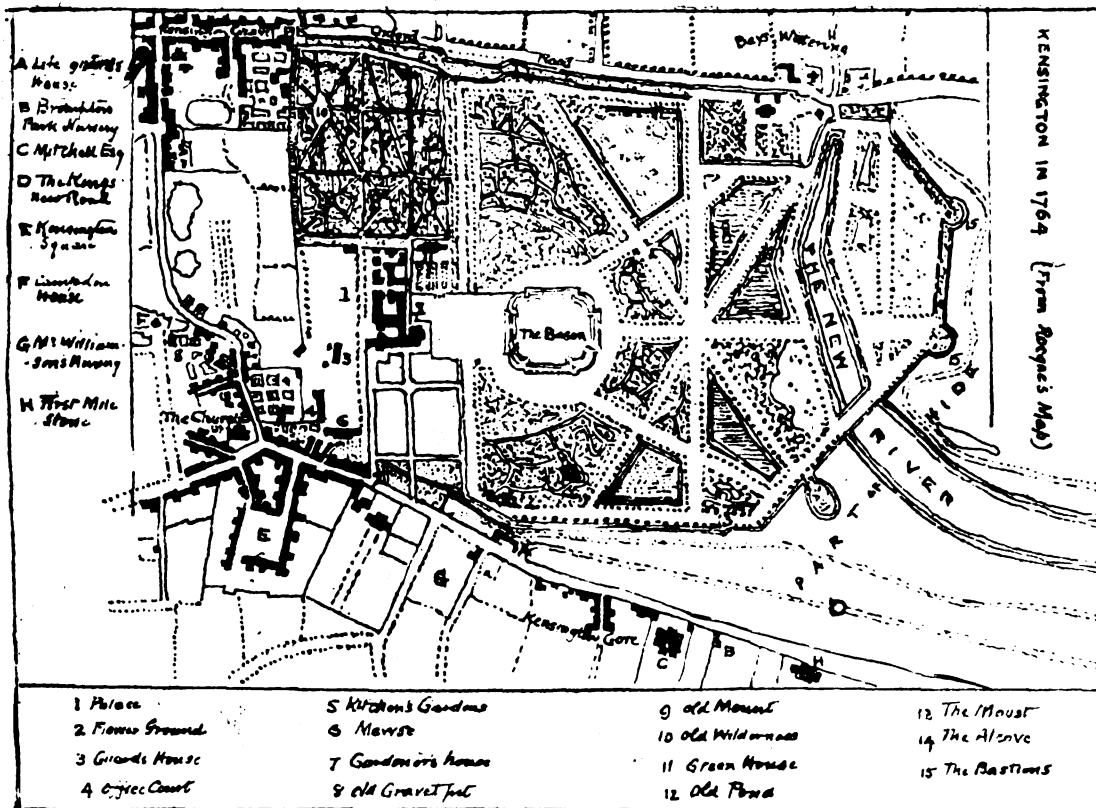
Queen Anne's energies in respect to alterations chiefly lay in the gardens and park. On the north side of the Palace there were meadows and gravel pits, and these were to a

large extent transmogrified and the gravel pits filled up. The Broad Walk, and probably many of the other avenues, were formed and planted. Wren was commissioned to build the Orangery, originally erected as a Banqueting House or ballroom, and often used by Anne as such, and the boundaries of the gardens were probably extended eastwards, as we read of them extending to the "Canal," which is what we know as the Long Water or the northern end of the Serpentine River. It is probable, therefore, that at this time (1714) some work had been done in the direction of the formation of the ornamental water out of the old Westbourne and its marshes and ponds.

It was, however, during the reigns of George I. and II. that Kensington Palace was at the height of such glory as belongs to it. George I. set William Kent, with his swelled-headed ideas of Art, to improve upon Wren, the result of which we see in the pompous suite of rooms in the north-central part of the main block, culminating in the Cube or Cupola Room, so called on account of its being nearly as high as it is wide and long. The north-west wing was erected by George II., chiefly for the accommodation of his growing family, but the influence of Caroline (Queen of George II.) was the most potent in respect to the expenditure of the Georges, as much as £100,000, it is stated, having been spent upon the gardens and Hyde Park. The Great Basin,

artificially confined, and the bottom cleared out and deepened, the resultant excavation being placed at the sides, as is perfectly evident as one walks along its banks on either side, but chiefly evident in the formation of the Great Dam at the lower or Knightsbridge end, having in its centre a weir, over which the water passes along 100 yards or so over its old course at probably its original level. The present arching and parapet at this weir are modern.

At the south end of this part of the Westbourne, between the Great Dam and Knightsbridge, there was formed, as is clearly shown by the records and by Roque's survey map, evidently as a part of this improvement scheme, a lower lake, 70 yards wide at its greatest part, and extending almost to Knightsbridge itself from the foot of the Great Dam, the New and Old King's Roads crossing it by bridges, and with a cascade or weir near its upper end, over which the water fell from the Serpentine outfall. At the Knightsbridge end it flowed through a short but narrow channel, and abutting on the bridge was a water wheel erected by the Chelsea Water Company, affording at flood times power enough to force or lift the overflow water as far as the Great Basin (in the Round Pond) in Kensington Gardens, which they had undertaken to keep supplied. This narrow channel was flanked by wooden and (latterly) dilapidated buildings, clearly shown by an old picture reproduced in



opposite the main or east front of the Palace, was constructed at this period, and a casual survey of the surrounding ground will show how, by depositing the excavated material from the basin on to the lower ground towards Kensington Road, the level was attained. We call this lake "The Round Pond," although in reality it is rectangular on plan, with shaped corners. George II. contracted with the Chelsea Water Company (then recently established for the purpose of supplying the rapidly developing district with water) to keep this basin filled at a price of £100 per annum and £50 additional for the supply of the Palace. This Water Company just after its foundation constructed a reservoir and pumping station in Hyde Park, near Grosvenor Gate, and the sunk garden with fountain still to be seen opposite the Mount Street entrance to the Park is the last relic of this enterprise. The eastern boundary of the gardens was extended considerably about this time, or a little earlier, and the sunk fence, or "Haw Haw," was constructed as we see it to-day, alongside the Ring Drive, from Victoria Gate as far southwards as the Serpentine Bridge, thus enclosing a piece of the new ornamental water. The chef d'œuvre, however, was the conversion of the Westbourne and its ponds into the noble stretch of water we know as the Serpentine River. The stream must have been temporarily diverted or

"London, Old and New," all of which, together with the lake, cascades, and bridges, were done away with in the alterations carried out to this part of the park about the middle of last century, and we now have some very sluggish water within a well-wooded enclosure of verdant grass with many trees, where you can see moorhens, herons, and rabbits disporting themselves. It is for all the world like some backwater of the Thames, miles away, while the stream (if it can be so denominated) terminates in a grated entrance to a drain culvert artfully hidden behind the bushes, and all this within a minute's walk of one of the busiest arteries of the West End Metropolis. A great deal of planting was done in the surrounding park, and it is recorded that many trees were removed and replaced, each requiring eighteen horses and sixty men to manipulate besides constant watering and attention for long afterwards. This work was completed in 1731, Charles Wither being the Surveyor-General of Woods in charge of the work during George I.'s time, and later Bridgman was responsible. Kent also had a hand, assisted by Capability Brown, and it must be freely admitted that the result is most admirable. It is recorded that two yachts were placed upon the lake for Queen Caroline's special benefit.

In 1834 the gardens were thrown open to the free use,

the inflow was naturally very filthy and unwholesome; thus the bed of the lake became largely a cesspool deposit, and for most part the water was stagnant, subject only to an arrangement made with the Chelsea Water Company to make good any evaporation loss by fresh supply from their mains. To remedy this an idea was put into force to pump the water from the lower end and discharge it at the upper, and some of the old pipes or troughs employed for this purpose are said to be still in existence along the north bank of the lake, though I have not been able to discover them. This was, as might have been expected, found useless, and the nuisance worsened until 1862, when a well was commenced at the Bayswater end, and a fresh and pure supply was soon obtained from the chalk, and there is still a pumping station there at the present day, which works the fountains at that end of the Long Water. The foulness of the bed, however, continued, and after considerable public agitation and a Parliamentary inquiry the water was wholly drained off, and, at a considerable outlay, 10 to 15 feet depth of foul mud was removed from the bottom, and a layer of gravel put down, the water depth being restricted to 5 feet at the Long Water and 14 feet at the lower end of the Ser-

Lambeth pottery of the seventeenth and eighteenth centuries, notably a bowl of 1737 inscribed "Drink Fair: Don't Swear." Entering Queen Anne's private Dining-room, we find the finishings intact, but differing in some slight details from those in the Queen's Gallery. It shows ingenuity in the treatment of the private entrance doorway, which is made to project into the room. There are here some very beautiful specimens of Battersea enamel ware of the latter part of the eighteenth century.

The next room was Queen Mary's Privy Chamber; here the wall panelling has disappeared, the dado only being left. The cornice is original, and of equal excellence to the others noticed, and there is the double monogram worked into its enrichment. Here more enamels arrested my attention, as did many interesting specimens of old watches and clocks.

Passing into Queen Caroline's Drawing-room, we come to the very inferior productions of William Kent, whose demerits I would not dwell upon beyond saying that the detail of every part is poor, proportion lacking, and the whole vulgar and pompous to a degree. The exhibits which attracted me here were the old tobacco pipes.

Although the official plan indicates the Cupola Room as the next to visit, we will take our own line, and inspect the King's Presence Chamber. Here we have Wren's dado, cornice, and fireplace, with Gibbons's carving; Kent came in and "improved" it with large window squares, clumsy doors, and a ceiling decoration of a distinctly Pompeian flavour. The Gibbons carvings to the overmantel were left alone, and are wonderful.

The King's, or Main, Staircase comes next. This was constructed by Wren, and it is a noble flight of Irish marble steps with wrought-iron balustrade of exceptional beauty of workmanship, even for such an artist as Jean Tijou. Kent added the heavy arcade and piers beneath the upper landing, and was responsible also for the wall paintings and the ceiling decoration. Kent may or may not have posed chiefly as an architect in his day, but at any rate his talents ran more in the decorative direction; and though his efforts in scene painting may not be of any superlative merit, yet the illusion he sets up is complete. Various persons notable in the Court entourage of his day are represented as looking over the gallery front at Royalty mounting the Grand Staircase. All these paintings are on canvas fixed to wall battens.

We now turn into the King's Gallery. This is the finest of the State rooms, and was erected in 1693 by Wren for William and Mary. Having formerly panelled walls, we have left now only the dado with an exceedingly beautiful cornice. It is thought that the panellings were removed by Queen Caroline to make more picture room. There is an extraordinary map and dial in the overmantel, on which, by a connection with a vane on the roof, a moving hand indicated the direction of the wind. This was erected by King William, but the moulding surrounding is said to be of later date by Kent, with the carved enrichments by pupils of Gibbons. The painted ceiling again is by Kent, and is gorgeous in effect. The former panelling, &c., of this beautiful room was covered over with white paint and gilding in 1725, and the following items were paid for the work:—

- | | |
|--|-----------|
| 1. For painting the wainscot, &c. | £ 32 16 0 |
| 2. For gilding the same | 154 4 0 |
| 3. For providing scaffolds for painters and covering the floors with boards to prevent damage thereto, &c. | 233 3 0 |

Can we take this as a typical surveyor's account in summary form, as presented to clients in that day? It seems likely that a good deal may have been represented by the "&c." in the last item.

Queen Victoria's Bedroom and Anteroom adjoining are the next in order, and are both very modernised apartments, interesting only from the fact that it was here that the young Princess was sleeping when awakened in the small hours of the morning of June 20, 1837, to be informed that she had then to assume the cares and responsibilities of the Throne which she so admirably sustained for a record period among our rulers of the past.

We next pass to the Nursery. This formed part of Kent's alteration, and is plain and undistinguished in character, interesting only by association from the fact that here our present Queen Mary was born in 1867. There are exhibited here some pictures of steam automobiles of the middle of last century and some lottery circulars of 1824.

The King's Drawing-room adjoining was one of the principal rooms in George I. and II.'s time, and is "Kentish" entirely. The ceiling is very heavy, with curious ceiling-painting bearing the "great" man's autograph upon it. From the windows of this room you look eastward across the basin and along the vista of the main avenue of the gardens.

It is a grand view, but not otherwise particularly pleasing; it is, however, difficult to imagine oneself within but a stone's throw of one of London's busiest quarters. There are several portraits hung here of the Georges and their family, by West.

The King's Privy Chamber adjoining is a kind of cul-de-sac. Here is an engraving of a picture by Kent, showing the marriage of George II.'s eldest daughter. Kent was a many-sided genius.

We now come to the last of the State apartments open to the public, and Kent's greatest triumph, viz. the Cupola Room, or Cube Room as it is sometimes called, although its height is considerably less than the length of its two sides. It is, like the rest of the work done at this time, pompous and vulgar, if gorgeous. To my eye, the architectural detail is very bad, and the pilasters, &c., ill-proportioned; the ceiling is very oddly painted to give the illusion of a dome, and the doorway porticoes are suggestive of an entrance to a mausoleum. Exhibited in this room are an old sedan chair, Hogarth's picture, Southwark Fair, and some very good silver exhibits.

Leaving the Palace, we must look at the Orangery, or Banqueting House, designed by Wren, and built under his supervision. It is a beautiful structure, undisturbed except for careful repair; there are the characteristic carvings over the alcoves at the east and west ends, and splendidly enriched cornices both inside and outside. Externally there is some beautiful gauged red brickwork, of the tone and colour apparently impossible to obtain at the present day, in pilasters and arches, the whole presenting a great field for study to the architectural student, whether professional or amateur. Several very interesting old lead cisterns—1663-1730—have been placed at intervals along the front terrace, while inside are specimens of the hansom and four-wheeler cab, and a knife-board omnibus, types rapidly becoming extinct.

The exhibits in the annexe are interesting, comprising some mediæval prison cells, dug-out canoes, the old Roman galley found on the New County Hall site at Pedlar's Acre, Westminster Bridge—the story of which the London County Council admirably set forth in a little pamphlet to be obtained of the attendants—all set up in tableau fashion, as nearly life-like as research and ingenuity can contrive. Opposite the south front of the Palace is a statue of King William III. of a very vigorous and virile type, presented to the nation by the present Kaiser of Germany. The old building at the south margin of the Palace green forming the old stables and mews is an interesting example of plain seventeenth-century work, well done and still sound and good. The dual monogram WM is to be seen on the rain-water pipes. It was probably built by Wren.

I am indebted to a historical guide to Kensington Palace by Ernest Law, B.A., for many of the statements contained in this paper.

FRENCH RENAISSANCE ARCHITECTURE.—III.

THE third of the ten public lectures on "French Renaissance Architecture," now being delivered on Thursday evenings at University College, Gower Street, W.C., by Mr. W. H. Ward, M.A. A.R.I.B.A., dealt particularly with "The School of Fontainebleau and the First French Architects: Henry II."

At the Renaissance secular building, Mr. Ward pointed out, takes a more prominent place than religious, for the Ages of Faith were passing into the Ages of Reason. In France, as in England and Spain, the pre-eminent force in national life was no longer the Church but the Royal power and Court. Such church building as occurred in the early sixteenth century was usually marked by fidelity to Gothic, though the churches of Saint-Eustache and Saint-Etienne-du-Mont in Paris indicate the process of translation to a new treatment. Among the most beautiful works of the early Renaissance in France are a number of tombs which, at first at any rate, were entirely executed in Italy, and therefore show almost pure Renaissance forms. An Italian family, the Giusti, settled in Tours and executed numerous sepulchral monuments of Carrara marble. French sculptors quickly became influenced by the fashionable fancy.

The "Style of Henry II." might, according to Mr. Ward, be more accurately described as the style of Catherine de Medici, his wife, for it almost exactly corresponded with the duration of her life in France, 1533-1589; whereas Henry only reigned from 1547 to 1559, and was not so conspicuous as his predecessor or successors in encouraging architecture. This new phase really began when Francis I. took up palace building with renewed ardour after his Italian campaigns. His favourite home was Fontainebleau,

which he transformed from an irregular and dilapidated fortified hunting lodge into a splendid, though still rambling, palace, enriched with the work of artists of all kinds and surrounded by delightful gardens. The history of the Advanced Renaissance in France is intimately bound up with these works. Mr. Ward therefore gave a rapid survey of the whole history of the palace until the building activity practically ceased in the reign of Henry IV.

The earlier Fontainebleau buildings seem to have been carried out by contractors—master-masons who worked under the King's personal instructions, possibly with the assistance of sketches made by Court painters. The results were not altogether very happy at first. But Francis quickly engaged decorators to come from Italy. These versatile artists at once began to exercise an influence on the architecture also. The new group of Italians belonged to the school whose lineage is traced from Brunelleschi, through Alberti and Bramante, to Raphael and Michel Angelo. The characteristics of their style were an abandonment of much of the exuberance and playfulness of some of the earlier work and an advance towards a more virile manner. The most important early representatives of this Roman School were Il Rosso, a pupil of Michel Angelo, and Primaticcio. Both were largely employed at Fontainebleau and had numerous assistants. Besides the groups of Italians at the palace and in various parts of France, an important influence was wielded by young Frenchmen who had visited Italy in order to study both the ancient monuments and the works of the most modern masters. Two at least, Jacques Androuet du Cerceau and Philibert de l'Orme, were in Rome soon after 1530. The latter in his writings expressed the greatest contempt for the examples of the Early Renaissance as exhibiting complete ignorance of the true principles of architecture. Two important mansions dating from about 1540 which show Advanced Renaissance ideas on an imposing scale are Ancy-le-Franc in Burgundy and Saint-Maur-les-Fossés near Paris, the former of which is still in perfect preservation.

In the year 1541 three Italians of note arrived; they were Serlio, Vignola, and Benvenuto. The two latter returned to Italy after a few months. Sebastian Serlio was appointed "painter and architect-in-ordinary in the matter of edifices at Fontainebleau" at a considerable salary. Apparently he acted in a consultative capacity both there and elsewhere, and he is spoken of with great respect in contemporary professional writings.

MANCHESTER SOCIETY OF ARCHITECTS.

At a meeting of this Society on October 24 Mr. Halsey Ricardo lectured on "Growth in Architecture."

In Professor Lethaby's little book on architecture, he said, there is that pregnant statement: "No art that is only one man deep is worth much. It should be a thousand men deep." It is much the fashion to accentuate the names of the architects of famous masterpieces and to regard them as the sole creators and originators of their work—to regard such men as Brunelleschi, Michel Angelo, and others as creative ends in themselves—as independent phenomena who individually affected and controlled the tendency of their time. Yet from another point of view we may look on them as resultants rather than causes. Their environment has produced them—not they their environment.

The stream of life is immortal, and the various mortal shapes in which it is manifested are the outward signs of its current, and owe their characteristics to the composition of the stream at the moment of their appearance. In our tributary of this stream the building instinct is immortal. Its manifestation at any period depends upon the ideals, the structural resources of the time. The dominant determining factor is the main stream of life. The history of the world is shown by its art with faithfulness exceeding all other record—with an eloquence unpremeditated by the craftsman.

This Mr. Ricardo then proceeded to show by a masterly view of the history of the arts, commencing with a contrast between the Assyrian bas-reliefs, with their tale of cruelty, strife, and oppression, and the Egyptian hieroglyphs, expressing their belief and hope in a future life, their delight in nature and animal life. Especially lucid was the account of the passing of mediævalism and the dawn of the Renaissance—the lecturer emphasising the growing tendency of the craftsman of the Middle Ages to perfect his own craft, giving it individualistic excellence, losing his view of the whole work, and the characteristic of the mediæval genius.

The emergence of the specialist paved the way for the

revival of learning. Coming to modern times, Mr. Ricardo maintained that the impress of our social, religious, and public life on any example of our work is greater than that of the individual architect who designs it. The buildings of our age express its temper; and posterity will look back upon our present period as one of high endeavour, even if we have failed in high endeavour.

SKETCHES BY THE LATE PHIL MAY.

THE Leicester Galleries, so generous in the provision of interesting collections of works of Art, have yet another in that formed by Mr. L. J. Drew, evidently an admirer of the late Phil May. Even if the present Art Critic is not to be classed amongst similar admirers, it may be conceded that a school of devotees of this artist is quite comprehensible.

Indeed, this same Art Critic, often unwillingly, is bound to admit the merits of much of Mr. May's work; nor is this reluctance in any way the result of prejudice. It results rather from the sense that, clever and dashing as the work may be, it is not Art of the level to which du Maurier, Tenniel, Keene, Bernard Partridge, and H. Furniss have accustomed the public. The above selection is of set purpose restricted to "Punch" illustrators. Is this idiosyncratic on the Art Critic's part? Surely not; but rather it is based on more truly critical grounds than are often taken.

It has been stated respecting Phil May that he was accustomed to work up his sketches elaborately and then gradually to eliminate all superfluous lines. True or not (and we doubt its accuracy), he was marvellously facile at expressing in the fewest strokes the greatest effects. Sometimes when he elaborated, his hatched lines assumed curious positions, failing to express horizontality here and some other quality elsewhere, such as were obviously necessary for expression. And a limitation of the artist's was that he seemed able to portray only common types of humanity, more often than otherwise the East End metropolitan type. Indeed, of all the sketches of young ladies shown in the exhibition there are but two passably presentable in facial treatment, and one of these (No. 93) is indeed piquant to an extent and noways reminiscent of Whitechapel.

His best work lies in portrait sketches, such as those of "Mr. John Burns," "Mr. Odell," "The Old Sergeant—Montreuil," and "An American Model"; to these may be added the fancy portrait sketches, such as "Songs and their Singers," "Le Sportsman," "The Widow" (No. 78), and a sketch of a man on a locker (No. 69). The "double-faced" portrait of Mr. Kruger is good, regarded as a caricature. But in many of the drawings the chief humour (or it would be better to say the chief merit) lies in the accompanying text.

Some of the "crowd" sketches are admirable, with their "scale" and their perspectivity; in fact, in his more diminutive work Mr. May is invariably satisfactory, as in the 'Arry series. A few of the "Punch" sketches illustrating particular conversations, such as Nos. 7, 32, 62, and 86, are very good indeed, and this is the effect obtained by a sweeping glance cast over the whole exhibition.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the Final Examination have been approved:—

Subject IV.—Design for a Senate House for a Modern University.—Mr. E. F. Bothwell, Mr. A. D. Clare, Mr. H. A. Dod, Mr. R. Duckett, Mr. E. Gee, Mr. E. H. Gibson, Mr. K. Glover, and Mr. E. Prestwich.

COMPETITION NEWS.

DONCASTER.—The designs of Mr. Maurice Thompson, of Doncaster, have been accepted for the erection of the new wing for the Yorkshire Institution for the Deaf, at Doncaster. It is estimated that the proposed new building will cost from £3,000 to £4,000. The premium offered was £50, to be merged in the commission.

HALE.—The Town-Planning Committee of the Hale (Cheshire) Urban District Council, with their adviser, Mr. Percy D. Lodge, Lic.R.I.B.A., of Manchester, have made the awards for competitive schemes for laying out the unbuilt-upon portion of the district under the Town Planning Act, 1909. The first premium of £50 goes to Mr. R. Dann, of Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex; and the second premium of £25 to Messrs. Robert Bennett, A.R.I.B.A., and Wilson Bidwell, architects, Letchworth (Garden City), Herts.

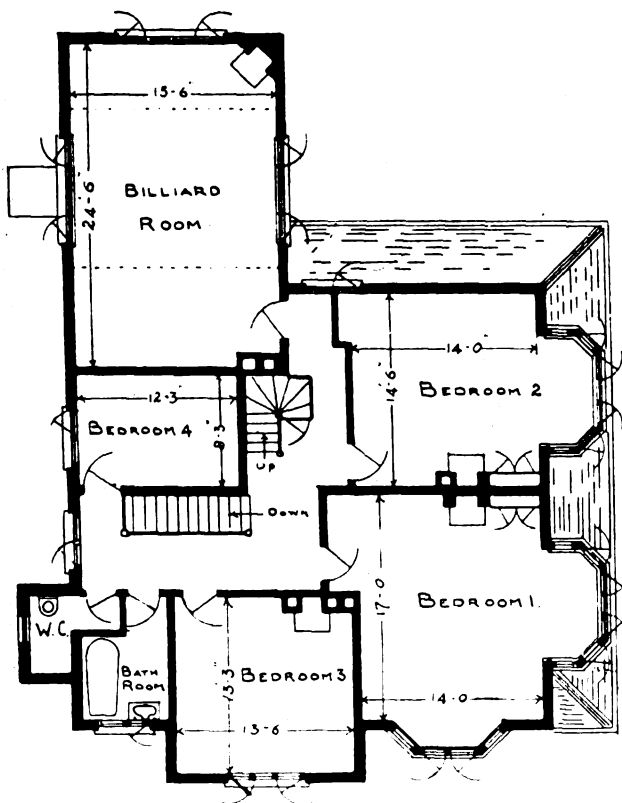
ILLUSTRATIONS.

"MANORLEA," PIERREPONT ROAD, ACTON.

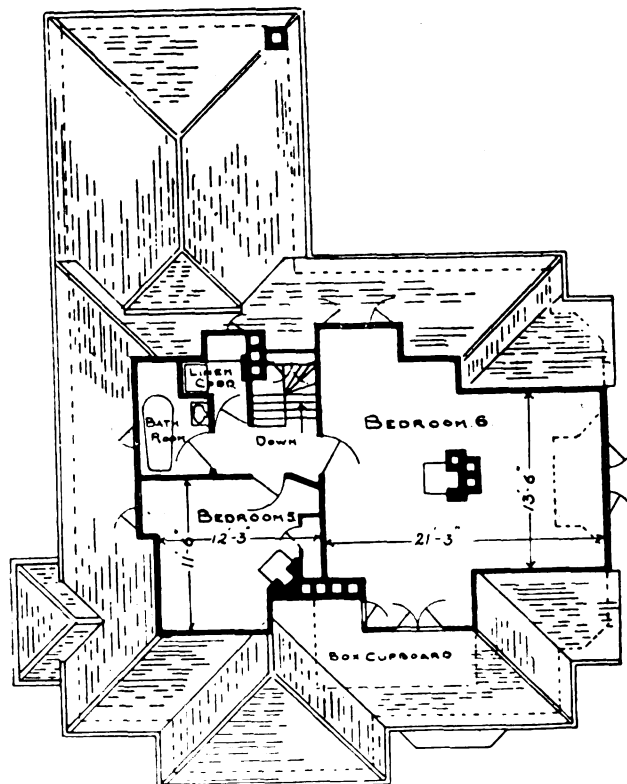
THIS house, which was finished in May last, was erected by Mr. Bolloom on the Springfield Park Estate at Acton. The

floors, the staircase is also of oak, and the dining-room has an oak dado 3 feet high.

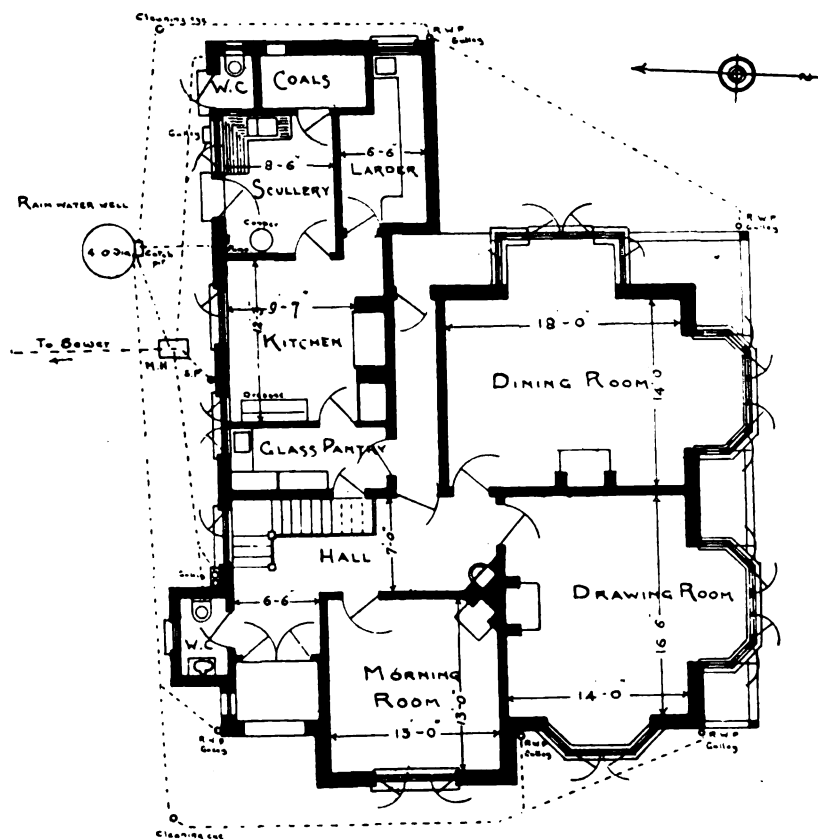
The fireplaces were supplied by the Teale Fireplace Co., and the electric light and bell installations were carried out by the engineer's department of Spiers & Pond, Ltd. The architect was Mr. F. Legg, Lic.R.I.B.A.



FIRST FLOOR.



ATTIC FLOOR.



GROUND FLOOR.

subsoil is gravel, and all the sand necessary for the building was taken from the site, which is about one acre in extent.

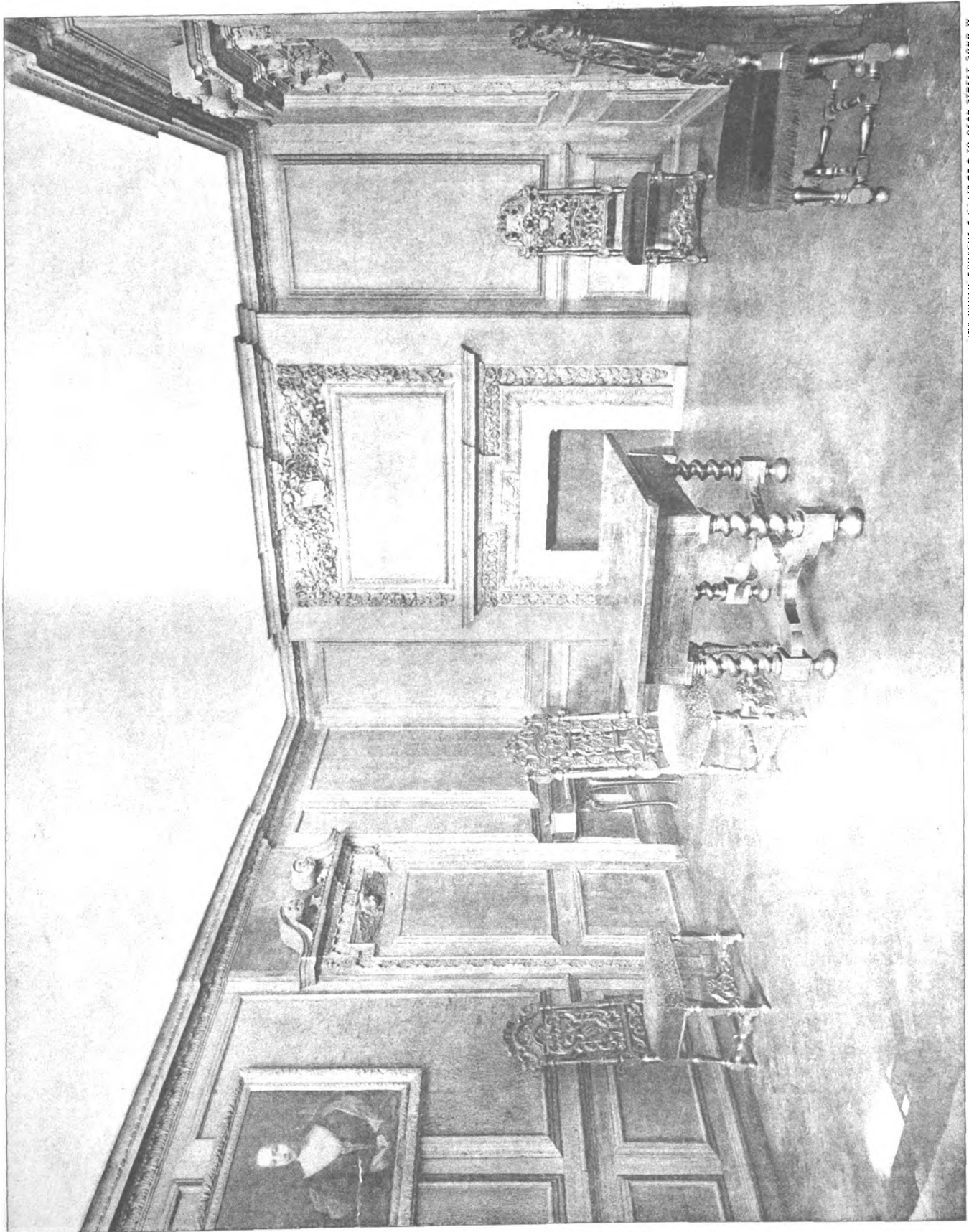
The house is built of stock bricks with cement rough-cast, and with Broseley tiles on the roof.

The hall is laid with white and dove-coloured marble squares; the reception-rooms on the ground floor have oak

PANELLED ROOM FROM NO. 3 CLIFFORD'S INN, LONDON, A.D. 1686-8.—ROOM IN JESUS COLLEGE, OXON.—KING JAMES' ROOM, DORFOLD HALL, NANTWICH.—WILLIAM AND MARY ROOM, NORTH WALES.

THE illustrations we reproduce have been described by Mr. A. E. Bullock in his series of articles on "Interior Decoration."





THE PHOTO SHAGUE & CO. LTD. 70, DEAN STREET, LONDON, W.

PANELLED ROOM FROM NO. 3, CLIFFORD'S INN, LONDON. A.D. 1686-8.

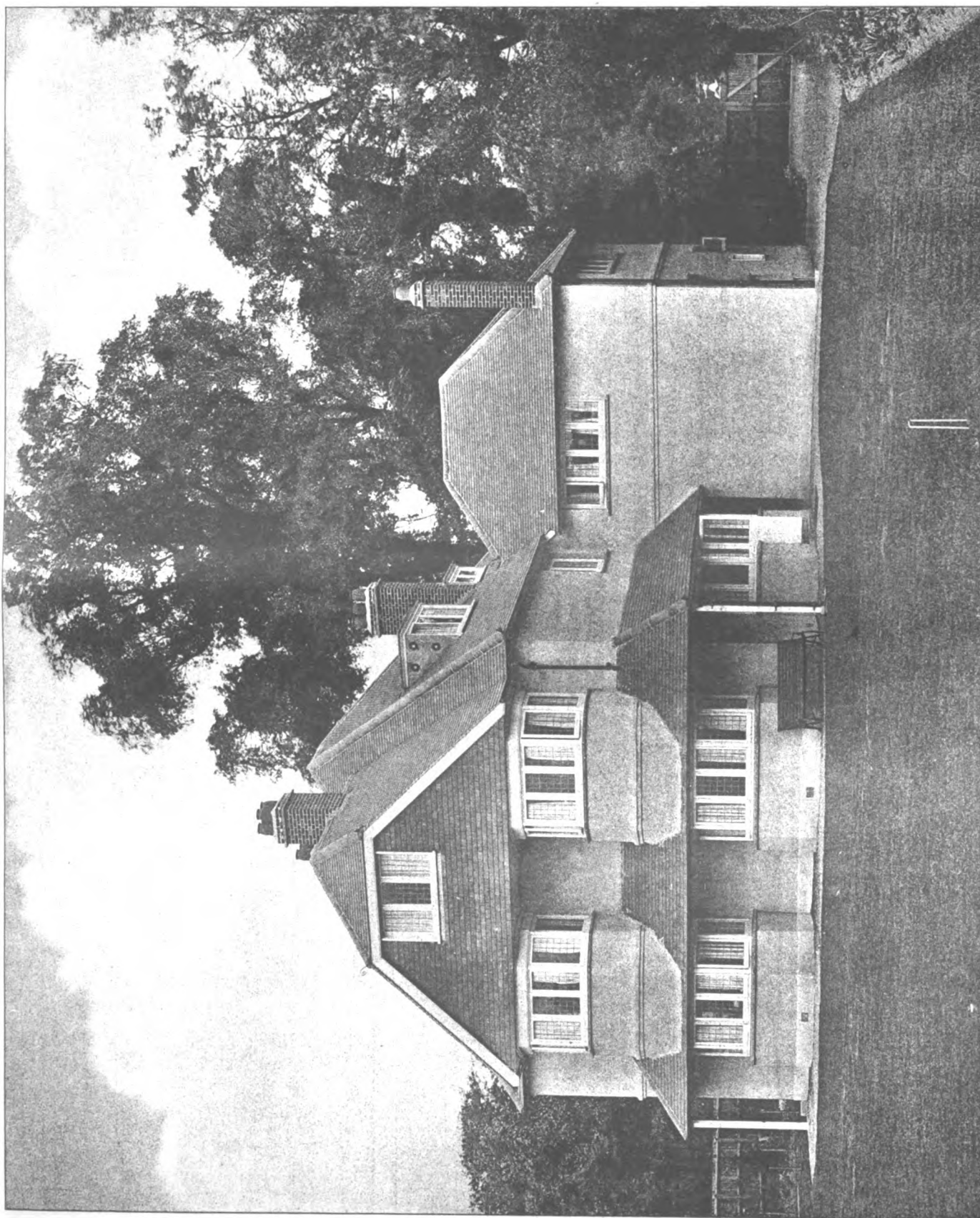




INK PHOTO SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

KING JAMES' ROOM, DORFOLD HALL, NANTWICH.

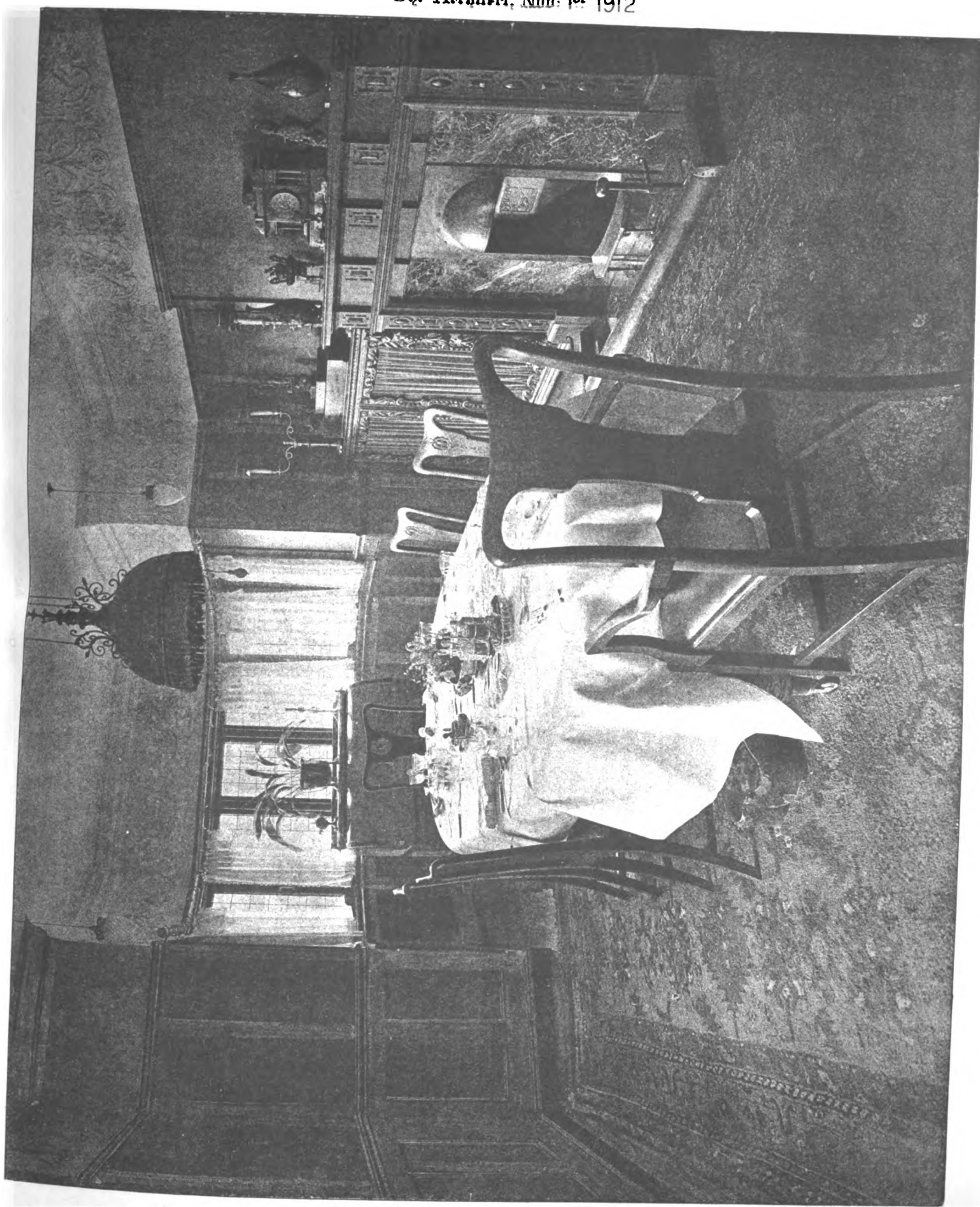




"INK-PHOTO" SPRAGUE & CO. LYS 68 & 70, DEAN STREET, BOND. W.

"MANORLEA," PIERREPOINT ROAD, ACTON, W.: THE GARDEN FRONT.

MR. F. LEGG, LIEUT. I.B.A., ARCHITECT.

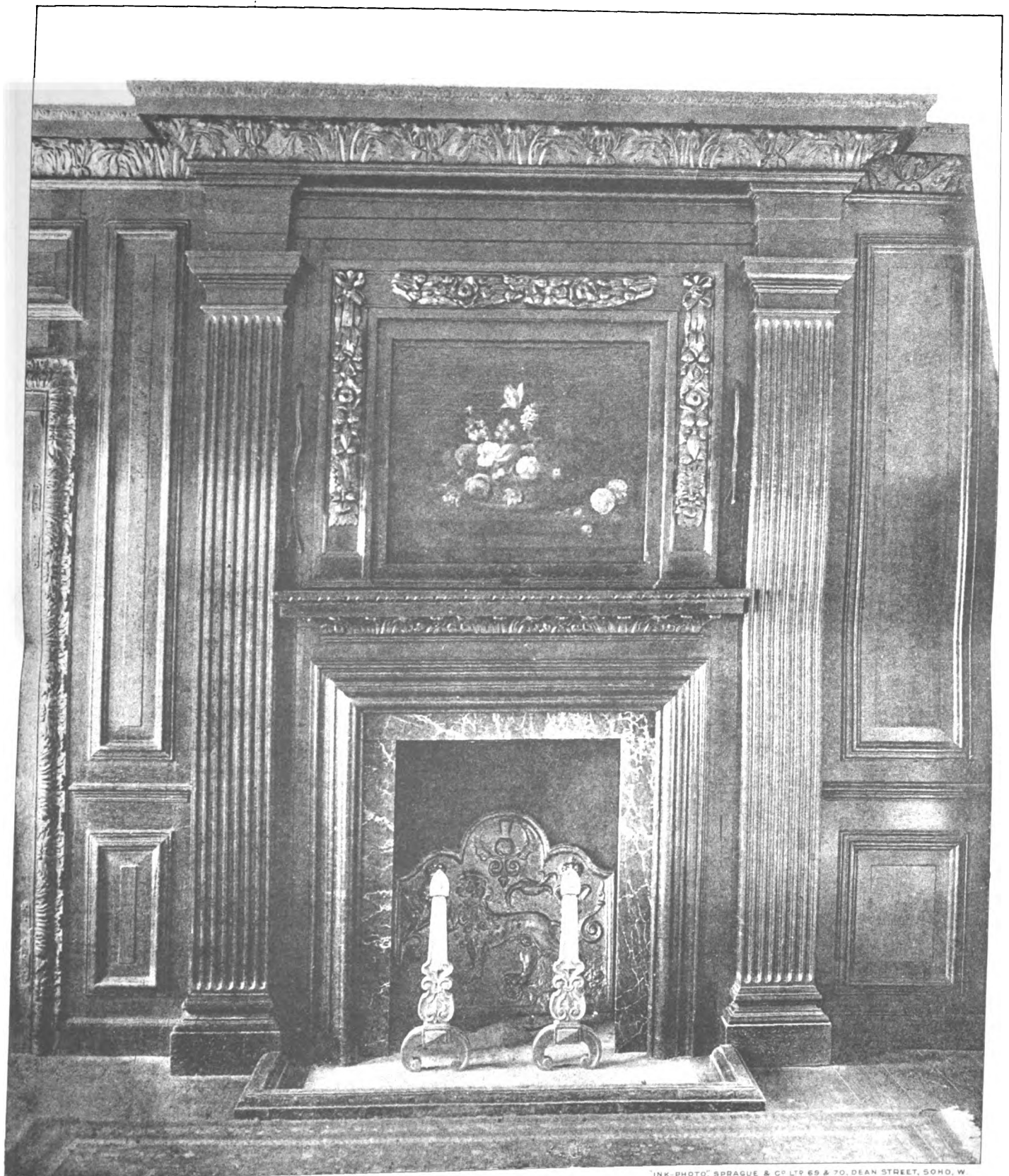


INK PHOTO. SERRAVALLO & CO. LONDON & 70, CECIL STREET, SINGAPORE

"MANORLEA," PIERREPOINT ROAD, ACTON, W.: THE DINING ROOM.
MR. F. LEGG, Lic.R.I.B.A., Architect.

MR. F. LEGG, Lic.R.I.B.A., Architect.





INK-PHOTO SPRAGUE & CO LTD 65 & 70, DEAN STREET, SOHO, W.

WILLIAM AND MARY ROOM, NORTH WALES.





THE PHOTOGRAPH BY S. H. H. & CO. LTD. 69 & 70, DEAN STREET, LONDON, W.

ROOM IN JESUS COLLEGE, OXON.



INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—III.

HOUSE OF HANOVER—THE GEORGIAN ERA.

(Continued from last week.)

THE decorations at Houghton constitute the *tour de force* of Kent, who was at the time in great vogue as an authority in matters of taste. Two of the craftsmen engaged were subsequently employed by Gibbs: they are the Italian Artari and the Dutch sculptor Rysbrack. The ceiling of the Stone Hall is the work of the former artist, while the pediments over the door openings are crowned with boys in various attitudes, from the chisel of Rysbrack. Houghton is the first English residence where Cuban mahogany was extensively employed. Hitherto the wood had been confined to furniture and marquetry work; its expense was still prohibitive except to those who possessed a gold-lined purse of unfailing supply. The staircase at Houghton was formed by Kent upon the Coleshill model, and its walls were decorated with chiaroscuro, in which Kent excelled. The furniture is in Kent's usual heavy style, with much carved ornament, with which it is interesting to compare the work of the closing years of the century by Sheraton, Heppelwhite, and the designs of the Brothers Adam. All the bold heaviness is purged from the later works, which strive after a delicacy almost approaching effeminacy.

The saloon is exceptionally sumptuous. Entering through a much carved and gilded doorway, the rich silk brocade lining the walls above the white dado is particularly striking, although it is the only connecting link with the coved, painted and modillioned ceiling. The ornamented entablature contains a frieze emblematic of the hunting field, with dogs, bows and arrows, &c., repeating at intervals. The marble chimneypiece is a very neat design in white and dark green marble, and compares favourably with the other rooms. The scheme of the Banqueting Hall, or "Marble Parlour," as it is called, is very bold. Only one side is in marble, with dark fluted columns having white bases and capitals of the Roman Ionic order. The chimneypiece is a fine composition, executed with remarkable skill. In the central panel Rysbrack has carved a bas-relief representing a Sacrifice to Bacchus. Grapes naturally figure prominently in the ornamentation of the room. The ceiling frieze is composed of them, while the soffites of the beams are carved with a running vine pattern. The White Drawing-room presents one of the best decorative schemes, although of two distinct periods. The narrow panels are filled with a light French silk tapestry, after the manner of Berain's designs, and thereby tend to lighten the effect of the otherwise heavy ceiling. The furniture is upholstered in keeping with the tapestry panels. "Plans and Elevations of Houghton," by Ripley, Kent and Ware, was published in 1755.

Wolterton is not so large nor yet as sumptuously finished as Houghton, and is for that reason a better example from which to study the treatment of the smaller mansion of the time. There is no lavish expenditure. It is just a typical early Georgian house of good design. The façade is of small red bricks with stone dressings to the windows, having stone also to the terrace arches, balustrading, pediment and cornice. Within the same simplicity is noticeable, the combined efforts of Kent and Ripley having produced a more restrained and tasteful essay than was usual. There is an absence of pediments, the door and window cornices being quite plain. The wrought-iron balustrading, the unpanelled dado, the simple chimneypieces of grey and white marble each indicate the discretion of their design or selection. The ceiling of the saloon is, perhaps, the most curious feature, since it has a subsidiary moulding above the modillioned cornice, into which the beams intersect at regular intervals, and on their soffites is modelled a Greek fret of unusual pattern, of which a replica existed not so long since in a house at Westminster, said to have been inhabited by Lord North.

Hursley Park, Hampshire, is one of the larger mansions rebuilt in Georgian times, within which are rooms decorated at different periods. The woodwork and ceiling in the boudoir, for instance, are of Jacobean origin; the fine carvings in the hall are adapted from the late seventeenth-century panelling that formerly adorned Winchester College; the drawing-room is a fine Georgian interior, and the ball-room is decorated in Louis XV. style. The panelling from Winchester College is a recent addition by the present owner, Sir George Cooper. The panels and stiles contain some fine carvings, the chief motif of which is the bay leaf, the emblem also of the frieze. The room which principally concerns us

is the drawing-room, since it is one of the original rooms and not an adaptation. It is divided into two parts by a large beam supported upon Ionic columns, similar columns adorning the walls and flanking the windows. Ornament is disposed sparingly, and the marble chimneypiece is surmounted by an overmantel of the type designed by Kent; otherwise the general character is such as might reasonably be attributed to Gibbs. The plaster work is free from the extravagances Kent was wont to display, the general tone of white and gold being very effective. Tapestries by Francis Boucher line the walls of the ball-room, with which the remaining decorations are in keeping. The general treatment is not unlike the work of Van Cleve at the *Œil de Bœuf*, Versailles, especially as regards the ceiling. Boucher worked a great deal with Verberck, succeeding Oudry in the management of the Gobelins in 1755. Oudry superintended the works at Beauvais. These additions were probably made after the death of Boucher in 1770.

Lord Burlington's villa at Chiswick was commenced in 1729. Henry Flitcroft came under the Earl's notice while working as a carpenter on one of his buildings, and was subsequently employed as a draughtsman upon Kent's edition of "Inigo Jones." Kent's work at Chiswick House is shown in the two accompanying views taken by Mr. Walter Spiers. The ornaments of the chimneypiece are unnecessarily florid, the treatment of the mantel itself being typically Kent. The recess in the second photograph is more restrained, if the ceiling is a little less so. The great rotunda under the central dome received his special attention, and there is, I believe, an original design of Kent's for this in the collection at South Kensington. Flitcroft, nicknamed "Burlington Harry," the son of Jeffery Flitcroft, who was gardener to William III. at Hampton Court Palace, eventually succeeded Kent as master mason and Ripley as Comptroller of the King's works. His principal productions were the churches of St. Giles-in-the-Fields (1731-34); St. Olave, Tooley Street; St. John's, Hampstead, and the rebuilding of Wimpole Church, Cambridge. He made alterations to Wentworth Woodhouse, Yorkshire, for the Marquis of Rockingham, and to Woburn Abbey for the Duke of Bedford.

Holkham, Norfolk, is built on the severer lines of the Palladian principles adopted by Richard Boyle, the Earl of Burlington, for his Chiswick villa, but upon a grander scale. The triple light windows are of the character which formed a favourite feature with Sir Robert Taylor later in the century, when he was architect to the Bank of England. The Ionic pillared hall differed from anything which preceded it, and is of severe Classic design, except for the freedom of the sculptured frieze and heavy ceiling beams. The fluted alabaster columns are raised on a podium forming a gallery, to give access to the principal rooms on the first floor. Thomas Coke, Lord Lovel, and afterwards the Earl of Leicester, commenced the house in 1734. His great-grandfather, Sir Edward Coke, the Lord Chief Justice during the reign of Charles I., died in 1634 at Stoke Poges, Buckinghamshire, possessed of sixty manors. He acquired valuable manuscripts, which now form part of the present library. His monument in Tittleshall Church, Norfolk, was erected in 1638 by Nicholas Stone. Thomas Coke had travelled much in his early years, returning from Rome in 1718. He consulted Lord Burlington upon the subject of his projected residence after the greater portion of the surrounding ground had been laid out and planted. William Kent was employed on the designs, probably paying his last visit to Italy in 1730 for the purpose of studying afresh Palladio's work at Vicenza. It is said that Antoine Desgodetz's "Edifices Antiques de Rome," published in Paris in 1682, was consulted for much of the interior of Holkham. To its influence the coffered cove of the hall may be attributed, together with the ceiling of the saloon. The Temple of Fortuna Virilis provided a model for the hall colonnade, while the ceilings and chimneypieces are the result of the study of the works of Inigo Jones. This great building was not completed when Kent was interred at Chiswick Church in 1748, nor when the owner died in 1759. Kent's labours were carried to completion by Matthew Brettingham, the architect of Langley Park, Norfolk, who was permitted by Lady Leicester to publish the "Plans and Elevations of Holkham," which appeared in 1761. Eight years later the elder Brettingham died, and his nephew Robert republished the volume, with additional illustrations of chimneypieces, ceilings, and letterpress. In this edition Kent's authorship of much of the work is acknowledged while the names of Inigo Jones and Antoine Desgodetz accompany other details.

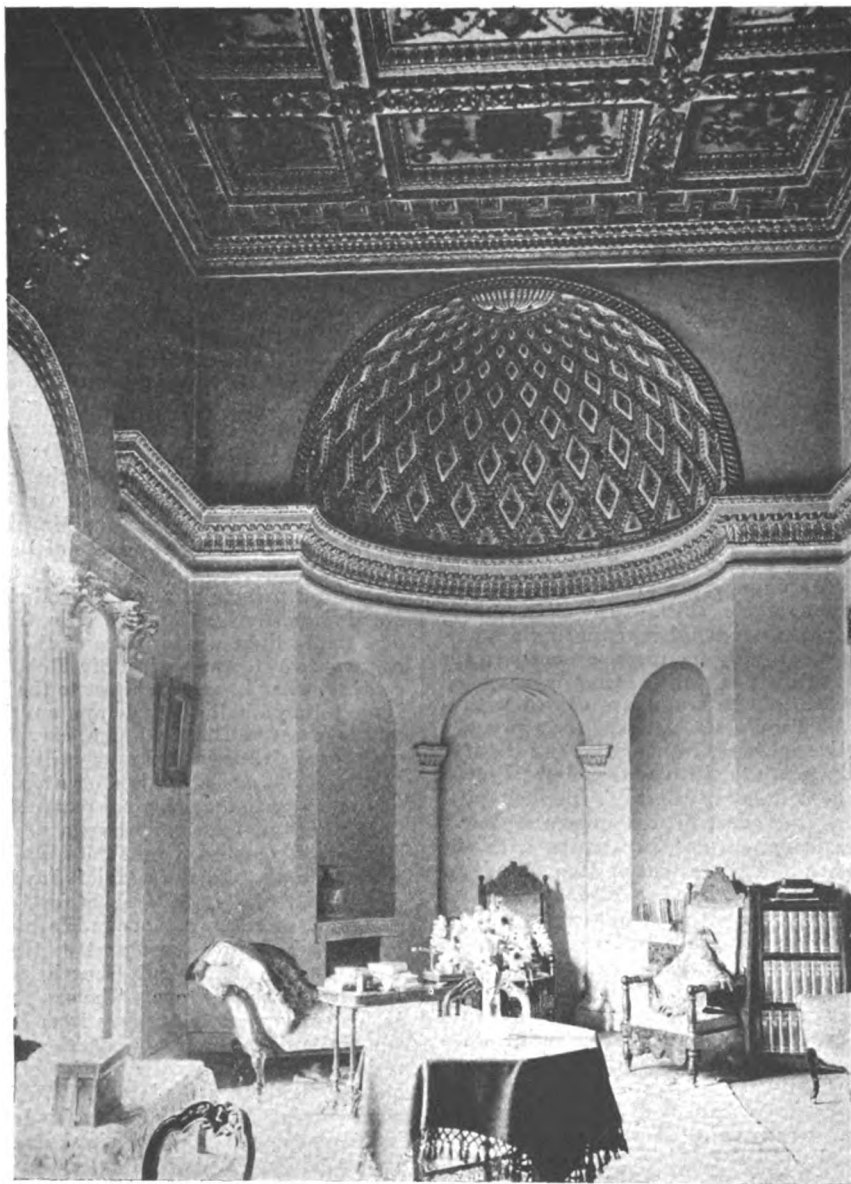
The chimneypieces vary considerably in design, those in the saloon and library having Ionic columns, of which the shafts are dark grey. The shelf to the drawing-room mantel

is supported on carved brackets; that in the Green State-room has caryatid angle pilasters; and the Claude room probably contains the most interesting example, obviously from Kent's design, with his favourite husk ornament, with heads and drapery treated in a manner frequently adopted by Webb. White and gold are the primary finishings to the ceilings, dados and door casings throughout, all the carved work being picked out with gilding. The library was probably completed by Brettingham, the vaulted cove to the ceiling being in the French manner. Tapestries line the walls of the Green State-room and the North State bedroom.

Nostell Priory, Yorkshire, was begun within a year of the commencement of Holkham, for Sir Rowland Winn, by James Paine, at the early age of nineteen, being enlarged

want of connection between its several parts. The frieze design is a running scroll of Classic detail, with heads modelled at intervals. The tapestries here are of great value, and are hung in a very successful manner, especially on the north and south sides, where they are "made up" with long panels painted with flowers to fill the excess of space next the doors on the east and west walls. The library and entrance hall are Adam *in extremis*. The library is well arranged, with its pedimented book cases and arabesque Ionic pilasters at intervals, but the hall, having no painted panels to relieve the general tone by way of contrast, presents an artificial aspect which is less satisfactory. Robert Adam records works here in 1776 and 1779, in which latter year he designed a gateway for the residence.

Wentworth Woodhouse, Yorkshire, is one of the principal



KENT'S WORK AT CHISWICK HOUSE.

later in the century by the sixth baronet upon the advice of Robert Adam. There is very little of the interior decoration free from this later style, even the dining-room—one of the original rooms of Paine's building—having been added to. The fireplace overmantel, doors and picture frames, with the cornice and frieze, savour of the original work; the ceiling itself is of French influence, and the available wall spaces are occupied by panels filled with Adam arabesques. The small circular pictures over the door heads are in the style of Angelica Kauffmann, of whom we shall have something to say later. The drawing-room is completely by Adam. The ceiling here is arabesqued, with a pattern of meeting semicircles having plaques of Wedgwood pattern with modelled figures upon a heliotrope ground. The frieze is a monotonous repetition of delicate spirals. The ceiling of the saloon is of rather more interest, but suffers from a

English mansions of the eighteenth century. It stands in a park nearly as large as Blenheim, and, like many another seat, contains its special treasure, the Whistle Jacket picture. The Diana of Holkham, the tapestries of Blenheim and Hursley, and Watson's carvings at Chatsworth are cases in point.

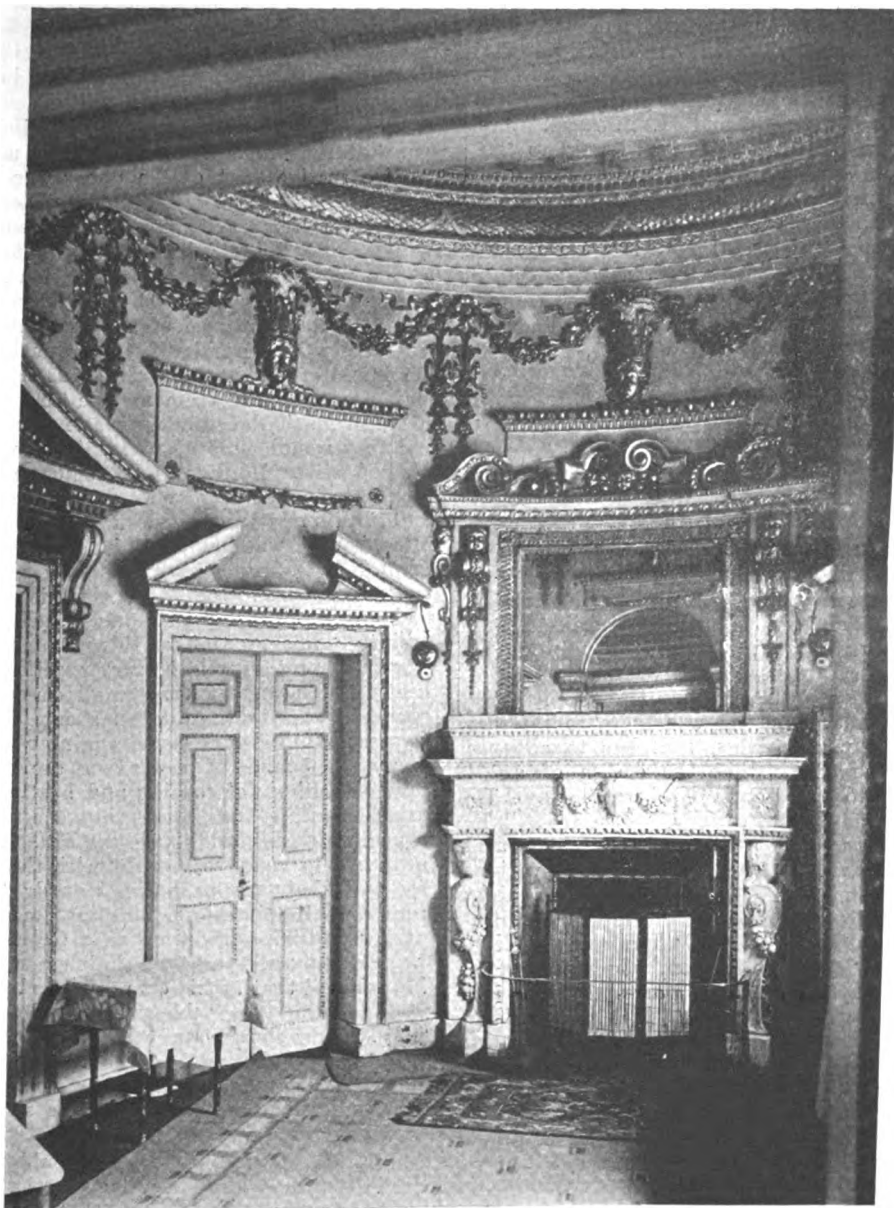
The greater portion of Wentworth Woodhouse dates from the time of Kent's latter years, as many of the interior details testify, although much of the older house was incorporated. Thomas Watson-Wentworth, Marquis of Rockingham, employed Henry Flitcroft as his architect, who was at the time engaged in building St. John's Church, Hampstead, and Woburn Abbey for the Duke of Bedford. The upper storey and wings were added in 1806 by Carr, of York, when past his eightieth year during the time of the occupation of the house by Earl Fitzwilliam. There

is little doubt that Kent assisted Flitcroft in the interior; the frieze over the gallery in the saloon is decorated with a variation of the famous Inigo Jones female head with festoons; the chimneypieces in the "Vandyke" room and the painted room both savour of Kent's system of design, while the panels and friezes of the dining-room and the "Whistle Jacket" room are of Régence influence. The ceilings are for the most part based upon Classic detail, with some freedom as regards the soffite panels of the example in the last-mentioned room, which has, by way of colour scheme, the white and gold treatment originally adopted by Inigo Jones.

Another assistant in the preparation of Kent's book on "The Designs of Inigo Jones" appears in the person of Isaac Ware, who was a skilled draughtsman and engraver. His career was not dissimilar to that of Flitcroft, whom

House, South Audley Street, for Philip Dormer Stanhope, adapting some materials from Canons, the seat of the Duke of Chandos. He similarly adapted materials from Lord Chesterfield's old house into one he built for himself at Westbourne Place, Harrow Road, which subsequently became the residence of Samuel Pepys Cockerell.

The Radcliffe Library, Oxford, was the outcome of a bequest by John Radcliffe, M.D., who died in 1714, but the building was not commenced until a much later date, being eventually completed by James Gibbs in 1747, who in that year published a monograph with complete drawings of this work, in which he mentions the names of the various artificers who assisted in the building. The masons were William Townsend of Oxford and William Smith of Warwick; the others include John Philipps, carpenter and joiner; George Devall, plumber; Townsend, junior, stone



KENT'S WORK AT CHISWICK HOUSE.

he superseded as clerk of works to His Majesty's Palace. If one may judge from the records left, his clientèle was even more extensive, which was doubtless due to his many publications and the popularity of his book, "The Complete Body of Architecture," which first appeared in 1735 and ran to two further editions during his lifetime. He occupied the position of clerk of works to the Tower of London, Windsor Castle, and the Board of Works. He took the place of Hawksmoor as draughtsman to the Boards at Windsor and Greenwich. After Kent's decease Ware completed the Horse Guards; made alterations to several buildings in Lincoln's Inn Fields; converted Lanesborough House into St. George's Hospital; completed Chesterfield

carver; Linel, of Long Acre, woodcarver; the Italian, Artari, plasterer "in the fretwork way"; Blockley, locksmith; and Michael Rysbrack, sculptor, "to cut the Doctor's Figure in Marble." The detail, although somewhat severe and academic, presents that scholarly quality which has always been associated with the name of the architect.

The second half of the century was ushered in with the publication of numerous books on ornament, joinery, ironwork, and Edwards and Darly's "Chinese Designs," which appeared in 1754 concurrently with T. Chippendale's "Gentleman and Cabinet Maker's Directory."

The chief practising architects of this period include Matthew and Robert Brettingham, John Adam, of Edin-

burgh, Robert and James Adam, Sir William Chambers, John Carr of York, Sir Robert Taylor, James Essex, James Stuart, Nicholas Revett, Henry Holland, George Dance, Joseph Bonomi, Thomas Leverton, James Wyatt, John Nash, and Sir John Soane.

(To be continued.)

THE ARCHITECTURAL ASSOCIATION.

A COMBINED ordinary general meeting of the Architectural Association and a meeting of the Camera, Sketch and Debate Club was held at Tufton Street, Westminster, S.W., on Monday last. Mr. Gerald C. Horsley, president, occupied the chair.

Three nominations for membership were read.

It was announced that the Annual Conversazione will be held at 18 Tufton Street on Thursday, November 21, at 8 p.m. It was also announced that the next meeting of the Camera, Sketch and Debate Club will be held on November 7 at 8 p.m. (Novices' Night), when papers will be read by Messrs. H. Bart Tunnard and H. E. Moss. Arrangements have been made for a visit to be paid to the Wesleyan Church House on November 16 (Saturday).

The President then read the names of forty-three gentlemen who were duly elected members of the Architectural Association. He also announced that Mr. W. G. Newton had been nominated to fill the vacant Hon. Librarianship, and that Mr. H. M. Fletcher was nominated for the vacant seat on the Council.

Mr. Arthur Keen, Hon. Treasurer, formally moved the adoption of the Council's report and balance-sheet for the session 1911-12, as given in the Brown Book.

This was seconded by Mr. W. Curtis Green, vice-president, and was carried without discussion.

Mr. Lawrence Weaver then gave his illustrated lecture on

Small Country Houses of To-Day.

His presence there was, he said, due to an invitation which their President had extended to him at the close of his address last session on Scottish Houses. While he felt much flattered at being called upon to speak so soon again, he wanted to guard against any misconception as to the way in which he proposed to treat the subject of "Small Country Houses of To-day." He particularly hoped that nobody would think he was there to instruct architects about their own business, still less to advance any theories as to the course that the design of small country houses ought to take, or is likely to take. Like the character in that admirable comedy, "The Liars," he might be an ass, but he was not a silly ass. It was natural enough he should have views of his own about the various streams of tendency in modern design. Perhaps he might be allowed to say that he did not think the sun of architecture first rose on Regent's Park, and that he was unable to agree that Wren was a foolish old person, whose chief function was to pave the way for the final glories of Soane and Nash. That, however, was by the way. His present business in life was to act the part of showman; to make clear to the public through the pages of *Country Life* how excellent and how varied is the work which the architects of to-day are doing, and to dispel as far as may be some of the fog of misapprehension which clouds the mind of people who are proposing to build. He endeavoured—no doubt very feebly, but quite sincerely—to make people understand that the building of their houses is the one branch of modern art in which they are most concerned. He conceived it his duty to show as many widely different types of houses as can fairly be said to represent an honest and unaffected outlook on the problem of fitting suitable houses to widely-differing needs and personalities. In the pursuit of that idea he had necessarily to show houses which to some people might seem either poor or positively bad; but he could claim that he had never written with appreciation about a house which did not seem to him to have some definitely good point, either in its planning or in its treatment, or that did not serve as a text which enabled him to explain how difficult are the problems besetting the architect. It was in the spirit of a showman he was going to put on the screen a series of houses, chosen almost at haphazard from the large number he had seen and described. Having very rarely written about a house without first seeing it, he had had the peculiar advantage of learning from clients what

they think about their houses, and about the ways of architects.

Mr. Weaver began with one or two houses by Mr. Norman Shaw and Philip Webb. He considered that the great structure of modern architecture has been very largely built on the foundations which they laid, though he would not exclude from that pioneer work such honoured names as Eden Nesfield, George Devey, and others. The first house to be illustrated was that designed by Philip Webb in 1859 for William Morris; the plan of "The Red House" was an extraordinarily bad one, though this was probably due to the idiosyncrasies of the owner who desired sunless rooms to sit in. "Coneyhurst" was designed by Webb towards the end of his career as an architect, and, while it does not reveal much development in plan, it is more regular than the other.

The remaining houses illustrated were roughly divided into four groups. First there was the traditional or cottage type which specially concerned itself with the local manner. Next came the houses which more or less took their form from their material. Then followed the houses showing direct historical influence and foreign influence. The final division was restorations.

Mr. C. H. B. Quennell, in proposing a vote of thanks, remarked that Mr. Weaver had been a very kindly critic. The instructive part of the paper was in seeing so much modern work in bulk. One could not help feeling that there had been no marked improvement since the days when Lethaby had designed his houses twenty years ago. Architects were still tied up with tradition; the best part now seemed to be the plan. The rooms were so disposed that each gets its allowance of sun, and the details of service are usually well considered. But apart from those qualities one found everything else almost as it was before the twentieth century. Let them assume that a client looks at his house in much the same way as he looks at his motor-car, and they would realise how architects would appear to have stopped still. Personally he could not help thinking that architects ought to try and consider a house as much as they could in its relation to modern methods of construction. One inconsistency was having 14-in. walls with a trumpery roof upon it. The plans of present-day houses were good; but when one comes to regard the elevations the excellence seems to break down. He would have liked Mr. Weaver to slang architects more. Another thing which worried him a little was in connection with the very practical side of cooking and heating. In an ordinary small country house there were probably used in the kitchen about fifteen tons of coal per annum. He wished some engineer would calculate how many foot-pounds of power there are in a ton of coal. Our present methods of cooking and heating are extraordinarily extravagant. Most houses are equipped with a kitchen-range which seemed hopelessly bad. In the course of the next twenty years they ought with the same amount of coal to heat their houses as well as do their cooking. With regard to the interiors, he might mention that the owner of a house who drives up in a Rolls-Royce car has, when he gets indoors, to sit on a chair made for a man in armour. He believed that architects needed to be much more practical and look at the problems from the engineering point-of-view. They should study hygiene, and not bother so much about the "wheezes." The nation was still abominably housed. Professor Reilly had contended, with probable truth, that the problem would be solved by a much more simple arrangement of the plan.

Mr. G. H. Jenkins said he could not agree that it was just as well to be frightfully practical and to forget to be artistic. It seemed to him that the houses one saw now were better than those designed before. He would like to have heard Mr. Weaver's ideas on the subject of the number of bathrooms desirable; people seemed to be nearing the time when they would require a bathroom, or at least a fitted lavatory, for every bedroom. The provision of an open loggia was an excellent idea if it was only open on one side and faced south, as then the family could have their breakfast in the open all the year round, with the exception of the four winter months. Mr. Quennell had mentioned the heating of houses. Nowadays it was easy to instal heating systems with their 3-in. pipes hidden behind the skirting. It was then possible to cut down the coal bill, as no one needed a fire except for appearance sake. It seemed a very moot point whether or not it was better to have the hot water supplied by a separate heater to the kitchen range. Where the hall served also as a living-room it was a great advantage to allow the servant to have direct

access to the front entrance door without passing through the hall.

Mr. A. T. Bolton remarked that the whole question resolved itself into trying to find a compromise between the ideas of the client and those of the architect. A house could not be properly judged without some idea of the special uses for which it was erected. A very modern house resembles a battleship, and the public cannot understand that if it possesses certain qualities and certain features it is practically impossible to also give it other features and qualities. There is always a risk that in gratifying the wishes of the client a house may become a hideous medley because of the impossibility of reconciling the various requirements. Mr. Weaver had mentioned the large number of small country houses erected in the Birmingham district. In the Midlands the same class of man who in the South buys a house there builds one for himself. He can acquire a site very readily, and there he erects a house ranging from £1,000 to £3,000. These are strict commercial propositions, inasmuch as for a given sum of money they provide certain accommodation, and when the architect is skilful the results are successful. Nowadays, unfortunately, the general public made architects responsible for the things they have never done. The jerry-builders' work is credited to the profession, although really architects have had nothing to do with it at all. The number of small houses around London erected from architects' designs is very small indeed.

Mr. T. L. Dale confessed that he felt very much in sympathy with Mr. Quennell's view in wishing architects of the present day could evolve something more characteristic of themselves than they had done hitherto. He felt that a development might be made in the direction of hygiene, though by this he did not mean they should design their houses like hospitals. The existing desire for antiques is a very great hindrance to an architect. If Mr. Weaver could induce people to look on a house as they looked on a motor-car it might help the profession to arrive at something fresh and distinctive.

Mr. Arthur Keen mentioned that Montacute was an instance of a house with a large hall running from back to front. This was obviously an inconvenient arrangement, and one of the owners bought the front of a house in the neighbourhood and re-erected it as an inside partition across his own hall. After looking at the photographs shown that evening, he could not help feeling it was a pity architects could not arrive at some standard of design. There was an affectation about most of the houses which was distressing. The present position was illustrated in the career of Mr. Norman Shaw, who designed and planned in every conceivable style without attaining anything fixed at the end. Philip Webb, however, was consistent throughout his long life. It seemed to him impossible that they would arrive at any recognised method of designing. The client was certainly as much at fault as the architect in the existing over-elaboration. A client becomes anxious to have a house or a room something like what he sees illustrated in the papers, the result being that the architect is pushed into doing something he does not approve of. The views had suggested what a very valuable thing scale was in domestic work. In the examples of the Birmingham School that quality was present in an extremely fine degree.

Mr. Cecil Brewer thought that a man who built his own house required more individuality in it than he would expect to have in his motor-car, which was to be put on one side probably at the end of three years. Mr. Weaver had been remarkably mild in his criticisms; perhaps it was impossible for a man to be a real critic unless he belongs to the trade criticised. An architect would probably have been much harsher.

Mr. G. C. Horsley then put the vote of thanks to the meeting, and it was carried with acclamation.

Mr. Lawrence Weaver, in replying to some of the points raised, remarked that, in connection with the advocacy of the use of modern methods of construction, they had to bear in mind that there were such things as by-laws. With regard to the leniency of his criticisms, he might say that he regarded himself as something in the way of a commercial traveller, and consequently he tried to boost up his wares. There were abroad various prejudices against architects as being faddists, unpractical, and possessing various evil qualities. Indeed, it seemed to him that there was more than enough readiness to find fault with the profession, and not enough appreciation. As to discovering the perfect kitchen-range, personally he thought that that might best be left to the owners of foundries. He quite agreed as to the heaviness of the trail of Wardour Street. It did not

seem as if they could have any standard of design, because architects had to meet the differing views of the millions of people in this country. Philip Webb was consistent because of his high-handed ways; he would tell a client who would not let him do just as he wanted to go away. The influence of the architect was solely a question of personality.

NOTTINGHAM ARCHITECTURAL SOCIETY.

THE opening meeting of the winter session was held at the Society's room on Wednesday, October 23.

There was a capital attendance when the President, Mr. Ernest R. Sutton, F.R.I.B.A. and member of the Council of the Royal Institute, delivered the following Presidential address:—

Brother Architects and Brother Students.—Allow me to embrace the earliest opportunity of tendering my thanks for the honour you have done me in electing me your President. I need scarcely say how greatly I appreciate the compliment, and that it will be my constant aim and endeavour to uphold the traditions and dignity of this important office.

This would also appear a suitable occasion on which to remind you of the distinctions gained by members of our Society and Nottingham men. For instance, Mr. A. W. Brewill has been appointed to serve upon the Council of the R.I.B.A., in addition to being a member of some of the most important administrative bodies, including the Registration Committee; Mr. T. H. Whittaker now occupies the post of chief architectural assistant to the county of Hereford; and Mr. Robert Atkinson has been selected to compete in some of the principal competitions of the year. I hope before long we may congratulate him on securing premier honours in one of these big undertakings.

Then it is a source of gratification to know that amongst the exhibits in the Royal Academy Mr. Arnesby Browne's great work, "A Norfolk Landscape," was universally conceded to be "the finest picture of the year," whilst in the architectural room of the institution Mr. Charles Gascayne and Mr. Robert Atkinson, both Nottingham representatives, had more of their works hung than any other two men.

It is also worthy of notice that this year every officer of our Society is a member of the R.I.B.A.

I think you will agree that this forms a most creditable and encouraging record of honours.

Before proceeding further I must touch one note of sadness. I am confident I am voicing the feeling of the members when I say with what keen regret we learned that our City Architect had been compelled to relinquish his office owing to continued ill-health. I would suggest an official letter be forwarded from this Society to Mr. Lewis expressing our sympathy and earnest hope that he will be speedily restored to health.

It is my privilege and pleasure this evening to address you on topics of interest to the profession, but the subjects which occur to me are so varied that I find it difficult to make a selection. A few details of the programme arranged by the Council for the coming session may prove acceptable. You will notice we have changed the evening for our meetings from Tuesday to Wednesday. I hope this arrangement will not be found inconvenient to our members. You will, I am sure, realise that it is most difficult to fix an evening that is equally convenient to all. Our reason for the alteration is that the School of Art and University College conduct important classes on Tuesday nights, and it was thought desirable to hold our meetings on Wednesdays so that the students at the classes should also have the opportunity of attending our gatherings. The designing class is to be continued this session, but on rather different lines. The Council hope that this class will be better supported than in the past.

The Council have been in communication with the University and School of Art authorities on the question of establishing classes embracing the subjects included in the Intermediate and Final examinations of the R.I.B.A. It is most gratifying to be able to report that these classes have been instituted, and it is hoped that the students will show their appreciation of the steps taken by the Council by attending the classes, which should be of great assistance to those preparing for the Institute examinations. I hope that ere long all architectural classes for students throughout the country will be linked up with our University centres and the R.I.B.A. I have not the slightest hesitation in stating that every architectural student should make it his first duty to pass the R.I. examination and become a qualified architect.

The Council have instituted a special Committee to undertake all matters connected with the Town Planning Act. I am glad to know that Mr. A. W. Shelton has consented to join this Committee, and I can assure him he will receive a hearty welcome. It is hardly necessary to remind you that Mr. Shelton has devoted a very considerable amount of time, energy, and money in studying the subject, and he is recognised as an authority both at home and abroad.

It is proposed that the Committee shall get in touch with all local authorities at an early stage and before they have actually prepared the completed scheme, in order that suggestions can be most effectively made both in regard to the planning and regulations comprised in the scheme.

We are constantly hearing of the boom in trade in different parts of the country, but I am sorry to say I have been unable to discover any signs of the boom having reached our City; the building trade is still in a depressed condition.

There are no capital and labour difficulties to draw your attention to at the moment; there is, however, a question that will, I believe, have to be considered by us in the near future—that is, our position with regard to the contractors adding 10 per cent. on all provisional items irrespective of the amount or class of work. In many cases this amount appears to be excessive, and more especially when the contractor does not add anything for his own services in connection with his sub-contractors. Let me just give you an illustration. You have a block of warehouses. The heating or electric lighting amounts to, say, £500. If we include this in the quantities the client will have to pay an additional 10 per cent. of £50. If it is kept out of the builder's contract our client will have certainly the trouble of drawing two cheques, but he will be £50 in pocket, less the penny stamp for the cheque. Now, what is our position? If we are instructed by our clients to omit all provisional items and treat them as separate contracts, has the builder any grounds for complaint? On the other hand, if we don't explain the 10 per cent. commission what is our position with regard to our client?

I should be neglecting my duty as your President were I not to make some reference to the finest improvement scheme undertaken by the Corporation for many years, the widening and rebuilding of Carrington Street.

The inability to successfully manage our street architecture appears to be almost a national weakness when one considers the prominent examples we have before us; look, for instance, at the Regent Street rebuilding scheme, the "Piccadilly blunder," and again the collection of promiscuous buildings in Kingsway. Now with regard to Carrington Street—I hope I am not getting on thin ice, but it is foolish to ignore the lessons which past mistakes have taught us. The initial mistake was sacrificing too much to the individual shopkeeper. The architect should have been given a free hand to design a façade of a monumental character and worthy of one of the finest streets in the City, and not be hampered by the hundred-and-one special requirements of a vast number of tradesmen carrying on different trades. It is not very difficult for us to realise what a magnificent street our ex-President would have given us if he had been allowed to carry out the whole of the buildings on somewhat similar lines to the very successful Carrara terra-cotta edifice façade. The opportunity of obtaining a grand approach to our City, flanked on either side by buildings worthy of such a position, has now, unfortunately, been lost.

I am introducing the subject of competitions this evening with the object of raising a discussion on the question. I am of opinion that we should use every endeavour to limit the number of competitors in all cases. In almost all open competitions the competitors expend collectively in the preparation of their designs a sum far exceeding the fees that the successful architect receives for the whole of his services. This is a very expensive luxury for the profession to be saddled with and one which we can ill afford to keep up. I cannot see how the cost of preparing competition drawings is to be reduced. You must, if you are to stand a chance of success, work out your scheme in every detail, and the draughtsmanship must be of a high order.

The conditions as revised by the R.I.B.A. Competition Committee are much improved; but I should like to suggest a further improvement—that the responsibility of nominating an assessor shall be in the hands of the Committee, and that the assessor shall be an architect who has either specialised or is an acknowledged authority on the particular subject.

There was a question raised at the last Council meeting of the R.I.B.A. which is of some interest. A limited

competition was instituted in Scotland (Edinburgh, I think), and the Edinburgh Society of Architects warned their members not to compete because the conditions were not considered fair. One of the architects wrote the Secretary of the R.I.B.A. asking if the rules of the Institute precluded him from competing, and the Secretary advised him that the Institute conditions did not apply.

I should like to refer again for a moment to the Royal Academy Exhibition. I think we have a real grievance here with regard to the amount of accommodation allocated for the exhibition of architectural drawings, though I can quite imagine the authorities replying: "It is the least popular room in the exhibition, except with the dear old lady who just pops in to have a quiet little snooze." This, I must reluctantly admit, is the case, and I regret to say it is in a great measure due to our own action. If we wish the general public to take an interest in the work exhibited in this much neglected room, we must supply drawings that have some interest to "the man in the street"; and I would advocate that in all cases the drawings should be of buildings which have been recently erected or are in course of erection. Many of the drawings which find a place on the walls are of buildings which are not, and never will be, in existence; rejected competition drawings and fancy pictures culled from the highly imaginative brain of the artist.

The question of registration is bound to be much in evidence this session owing to the Council of the R.I.B.A. having a large majority of its members pledged to support registration. It is perhaps worth while to review the question and see just where we stand. Registration has been before the profession more or less prominently for many years, even before the birth of our Society; but no definite plan of action was suggested until the Society of Architects made registration the keystone of their policy.

The R.I.B.A. were urged by a small section of their members to pursue a similar policy. This has been done for some time with varying enthusiasm according to the personnel of the Council. In 1903, I think it was, the registrationists formed a strong Committee and nominated for the Council a group of men committed to their policy. They were successful at the election, and in 1905 a Bill was drafted and presented to the members of the Institute. This Bill was, however, rejected.

In 1908 the question was again to the fore, but it was obvious to all that if a Bill was to stand the slightest chance of becoming law the scope of the Bill must be considerably widened. With this object in view another class of members was created—the Licentiate. This was the means of attracting to the ranks of the Institute a large number of architects. The numbers now are: Fellows 859, Associates 1,581, Hon. Associates 56, Licentiates over 2,000. It was also proposed to join forces with the Society of Architects, and a Bill was drawn up for the Society of Architects to be amalgamated with the R.I.B.A. The new Bill was prepared, and in January of this year was presented to the members. There was strong opposition to the amalgamation of the Society of Architects, and an amendment was carried: "Referred back to the Council for further consideration." At the first Council meeting of this session a strong representative Registration Committee was appointed to consider and report on the question. What conclusions this Committee will arrive at it is impossible to say, but I am of opinion that a Bill will be drafted on such lines that it will be acceptable to all classes within the walls of the Institute.

As I have on several occasions spoken against registration I should perhaps state that I am now strongly in favour of registration, and one of my chief reasons for this change of attitude is that I fail to see how we can set up a high degree of education unless we keep before us the advantages of registration. It is impossible to exaggerate the importance of education. We find on every hand, in every walk of life, a higher standard of education is demanded, and it is essential that the architect of the future shall be thoroughly trained in his art, and of a higher educational standing than in the past, if the status of the architect is to be maintained, so that he may take his proper place in the group of learned professions.

I am not convinced that registration will confer any pecuniary benefit on the average architect. Competition will, I imagine, be keener, and for this reason. The boy who enters the profession to-day is, as a rule, one who has a desire to design, to create; he has a strong natural desire to become an architect; but when we have obtained our Act of Parliament, and are a closed profession, is it not probable that many will be attracted who have no aptitude

for the work? This I sincerely hope will not be the case. In conclusion, gentlemen, let me impress upon you that whatever trials and difficulties we may be called upon to face we must at all times remember that we are members of a noble profession, and that no career has greater possibilities for influencing the world in which we live. It is an art that perhaps more than any other marks the character and history of nations. Surely the advancement of such an art is worth living and working for.

After the address the members adjourned for refreshments, kindly provided by the President, and on returning to the Lecture Room a hearty vote of thanks was accorded to Mr. Sutton for his address and hospitality.

A discussion followed on the various points mentioned in the address.

The Nottingham Society celebrate their jubilee on November 12 by a *conversazione*.

INSTITUTION OF MUNICIPAL ENGINEERS.

THE annual general meeting of the above Society was held on October 11 and 12 in London. On the afternoon of the first day four papers were presented for discussion. The first, by Mr. F. W. Platt, dealt with "The Modernising of Building By-laws," and was reported in our issue of October 18. Mr. H. C. H. Shenton (Member) then presented his paper on "The Local Government Report on the Intercepting Trap," a report of which appeared in our last issue.

The third paper presented was by Mr. W. Louis Carr (Member), and dealt with "The Influence of Town Planning upon the Public Health." The author explained how a scheme prepared under the Housing and Town Planning Act can influence the public health of a community, such as that of the district of Ruislip-Northwood, in the county of Middlesex, of which he is surveyor. They were the first Urban District Council to obtain authority from the Local Government Board to prepare a scheme, and now they have on exhibition a draft town planning scheme, including "General Provisions," for the consideration of the various owners included in the area. After due consideration of the objections raised by owners, the Council will shortly forward to the Local Government Board for their approval this draft amended as far as may be advisable.

The routine methods of procedure to obtain the sanction of the Local Government Board to prepare a scheme are set out in "Town Planning in Practice" (price 1s.), a booklet issued by the National Housing and Town Planning Council. The powers given by this Act are intended to be applied to land in any stage of development.

(1) An already developed area—probably a town built many years ago not on satisfactory lines. The Act in this case enables the authority to gradually re-model such town.

(2) Areas partially developed, or ripe for development, where a growth of the population is in evidence. The Act in this case gives power to an authority to frame such "General Provisions" as will ensure the future growth of a district on more satisfactory lines than those haphazard developments which the past has taught us to be expensive, unsatisfactory and insanitary.

A scheme prepared under the Act has a bearing upon the public health of a partially laid out and growing district as regards the following points among many others:—

(1) Roads (their width, construction, convenience to the community, relaxation of by-laws, &c.); (2) sanitation (sewers, refuse collection, &c.); (3) cemeteries; (4) sewage disposal works; (5) sites for public buildings; (6) open spaces (private and public); (7) building lines; (8) space about buildings; (9) limitation of numbers of buildings per acre; (10) height of buildings; (11) character of buildings; (12) protection from fire; (13) sanitary convenience and amenity (such as offensive trades, advertisement hoardings, fences and trees, streams, &c.); (14) allotments.

Mr. Carr then enlarged on these various heads. In speaking of No. 7 (building lines), he said he believed in foreign countries the building line is one of the chief and most important features of their town plan, and bears more relation to the other provisions of a scheme than anything else. On existing main roads, and those the Council consider are likely to become main roads in the future, a building line should be fixed and shown on the map, when it can be enforced under the Act. A minimum building line for the whole area to govern the width between buildings should also be defined—probably 60 feet is the least. As to building lines on any new streets of a width of 40 feet, he sug-

gested that the limitation of the number of buildings per acre is the most satisfactory way of controlling this. For instance, in the case of a 40-foot road in an area scheduled at eight buildings per acre the building line would probably be 15 feet from the boundary of the street, 35 feet from the centre of the road, and 70 feet between houses on either side. Building lines will also require to be determined for streets over 40 feet in width, for the projection of shops (in shopping centres), corner sites, bay windows, and certain public buildings to project beyond the general building line.

SPACE ABOUT BUILDINGS.

The proportion of site covered by buildings has to be settled, due regard being given to distinguishing the space to be allowed for a shop, warehouse, or dwelling-house. The space at the rear of buildings is a most important health matter, and a considerable amount of thought must be given to it. Reference may be made to the dark and ill-ventilated kitchens to houses, owing to the window opening opposite a high brick wall, perhaps only some 2 feet away. A clause should be inserted in any town planning scheme which will obviate this. The least distance should be 5 feet.

LIMITATION OF NUMBER OF BUILDINGS TO THE ACRE.

This is one of the most complex problems arising from any application of the Act, and requires separate consideration for every district. Each district will have to consider its own particular amenities; no standard can be fixed. In a manufacturing district the circumstances will be found entirely different from those of a residential area such as mine. At the same time, the question of any part of an area at present residential being converted into a large manufacturing centre must be considered. The Ruislip-Northwood Council are dealing with this question as follows:—

(a) The lands belonging to any owner which are contiguous, and which are not greater than five acres in extent, shall form a "land unit" within the several restricted areas. (b) In all other cases the lands which belong to the same owner, and which are comprised within each of the five-acre squares, shall form a "land unit" within the several restricted areas. (c) Provided that any lands comprised in any such square, which are not greater than two acres in extent, may, where such lands immediately adjoin other lands belonging to the same owner, be included with, and shall, together with such other lands, form a "land unit," but in no case shall any "land unit" be greater than seven acres in extent. The several restricted areas in the district are four, six, eight and twelve to the acre, and on one acre in a "land unit" not more than twenty buildings may be erected as dwelling-houses, and not more than twenty-four buildings of any other kind. Here is an example. On a five-acre estate in a restricted area of eight to the acre the owner may, if he wishes, build twenty houses on one acre, leaving the remaining twenty to be built on four acres. A landowner may take advantage of this very materially; he may have quarry workings, say, and build round the outside of them, and leave the remainder as open space.

HEIGHT OF BUILDINGS.

Provision under this heading should be made governing the measurement of the height of buildings in streets, for corner buildings, and storeys in domestic buildings in restricted areas where the limit exceeds eight to the acre.

CHARACTER OF BUILDINGS.

Areas should be scheduled for warehouse and factory sites, shops and business premises, compulsory and optional. As regards the size of living-rooms and bedrooms, the Ruislip-Northwood authorities are, in their scheme, suggesting that every new dwelling-house shall be provided with at least one living-room having a floor area of not less than 144 square feet, and containing not less than 1,152 cubic feet, and one bedroom having a floor area of not less than 135 square feet, and containing not less than 1,080 cubic feet. No bedroom or other habitable room in any such dwelling-house shall have a floor area of less than 70 square feet, or contain less than 500 cubic feet. In a restricted area above eight to the acre no domestic building shall be constructed for the use of, or be occupied by, more than one family, except in the case of a dwelling-house, or flats or chambers specially planned for the purpose, and every person who shall intend to erect a new domestic building, or alter any existing building within such restricted areas, shall, before commencing to erect or alter such building, deliver to the Council a statement in writing declaring whether such building is intended to be constructed for the use of, or occupied by, more than one family. In their "General

Provisions" they propose to limit the grouping of buildings to eight erected under one roof, or without a break in building down to the level of the ground level, and no such break shall be of less width than 4 feet.

External elevations to buildings should, in Mr. Carr's opinion, be governed to a certain extent by the local authority, subject to referring any dispute to the Royal Institute of British Architects.

All the above provisions as to "character of buildings" will tend to stop the miserable housing seen in different parts of England at the present time, and better lighting, ventilation and drainage are to be hoped from such clauses framed under the Act.

RELAXATION OF BY-LAWS AS TO NEW STREETS.

A Council should provide for some relaxation of the Model By-laws to apply to all their area, whether town planned or not, and Model By-laws are issued by the Local Government Board, in which may be filled in the desired width and form of construction. Here is an example of a by-law as to construction and lay-out approved in a certain district by the Board:—Thirty-six feet street (not greater than 900 feet in length), with 24-feet carriageway, 16 feet metalled; two 6-feet paths, 5 feet metalled; turning places for vehicles every 300 feet apart, the space between the metalled portions being suitably laid out with grass, trees or shrubs.

As regards the relaxation of by-laws in a town planning area, these will have to be framed so that they are capable of dealing with all cases of estate development, and by-laws will be put into the "General Provisions" for dealing with these. The width of any new street will be probably determined by its length, allowing for suitable turning places for vehicles, width of metalled roads and paths. A 20-feet street will probably be laid out with a 14-feet metalled carriageway and a 24-feet street with a 16-feet metalled carriageway. This would allow two vehicles to pass.

The keynote of the Act is for a local authority, in using the power bestowed by the Act, to relax, mitigate or waive immaterial by-laws in return for more material advantages which can be given by the landowner, so that the public may gain certain advantages without anyone being the worse or out of pocket.

It must also be borne in mind that the temptation to a public body to misuse or absolutely apply these new powers is very great, but unless they keep strictly within the bounds of reason and fairness the whole Act will be rendered nugatory and void. It must be remembered that a person developing an estate has to make it a profitable undertaking, and if the profits are unduly taxed by unfavourable imposition a state of stagnation will arise, or the development of a district will be seriously retarded and hindered, and its last state rendered worse than its first. The aim of all parties must be to give away what is unnecessary if any advantage can thereby accrue to the other parties, and to secure from them some tangible benefit in return; in other words, to obtain a quid pro quo.

APPENDIX.

Some particulars of the Ruislip-Northwood town planning scheme:—

Area of district	6,585 acres
Area in town planning area and scheme	5,690 "
" " " " " "	60 "
Area of excluded portions in town planning area	Outside Authority. 195 acres
Areas for proposed open spaces (in restricted area 4 to the acre)	21 "
Areas for proposed open spaces (in restricted area 6 to the acre)	None
Areas for proposed open spaces (in restricted area 8 to the acre)	100 "
Areas for proposed open spaces (in restricted area 12 to the acre)	56 "
Areas for restricted area 4 to the acre, all residential	1,310 "
Areas for restricted area 6 to the acre, residential and shops, and factories optional.	260 "
Areas for restricted area 8 to the acre, residential and shops	2,000 "
Areas for restricted area 12 to the acre, small residential, shops and factories optional	2,180 "
	5,750 "
Areas for factories optional, 110 acres.	
Areas for shops and business premises optional, 200 acres.	
Areas for shops and business premises compulsory, 54 acres.	

Mr. A. R. Bleazard, borough engineer, Clitheroe, argued that it must inevitably be more expensive to erect only ten or twelve houses to the acre than to put forty as under the old conditions. Another difficulty existed in, for instance, the north-east of Lancashire, where it was essential for people to live near their place of employment. It would be interesting to know how town planners were going to get over such a problem as that.

Mr. E. R. Capon said that town planning, when carried

out, will be a high ideal; but when that ideal will be attained it was difficult to say. His own Council had had the question under consideration for the past two years, and they had not yet got very far forward. Supposing there were ten owners concerned in a particular scheme, nine might agree, but if the tenth stood out the scheme was hung up. It was, he feared, going to prove a very costly affair to the ratepayers. A minimum height of 8 feet for rooms seemed to him much too low, because cottage property required higher rooms than better-class property.

Mr. A. E. Prescott, borough engineer and surveyor, Eastbourne, invited the meeting to come to Eastbourne for a lesson in town planning. There they had only two large landowners to deal with, both of whom were men of large minds. Twelve thousand trees had been planted in the streets, and most of the thoroughfares had grass verges. With regard to the latter, it seemed impossible to keep them in order unless they were protected with hurdles or railings. However, it was possible to put down gravel verges, which looked equally well, while not costing nearly so much. The chief thing for planners was to see that a new town was laid out on new lines, with a central point and wide roads. In the past towns had been too much under the jerry builder, who wished to erect two houses on a site where only one should be. The success of the Act depended very largely on the way in which the landowners were going to look at the question.

Mr. E. A. Strickland, A.M.Inst.C.E., borough surveyor, Windsor, advocated that every surveyor who has to deal with the apportionment of land should urge the provision of crematoria, instead of spending thousands of pounds on new land for cemeteries. By so doing they would be doing good both for the present generation and for the future.

Mr. W. Louis Carr, in replying to points raised by these and other speakers, mentioned that the general opinion seemed to be that twenty houses to the acre was going to be the maximum allowed by the Local Government Board. It was undoubtedly true that if the landowners were against a scheme of town planning the local authority would be able to do very little. Under the Act it was possible to get amenities of every kind. The Ruislip-Northwood Council had already secured over eleven acres of open space without the expenditure of a penny, and some of that land is valued at £800 an acre. With regard to the proposed minimum height for rooms in cottages, it was his opinion that 7 feet 6 inches was sufficient if there was extra superficial area. The cost up to date of the Ruislip-Northwood scheme, inclusive of everything, was £267. A site had been appropriated for the various municipal activities.

FOUR CONTEMPORARIES FROM OVERSEAS.

The American Architect (New York) illustrates some sumptuous decorative buildings in Hudson County Park, Hoboken, N.J., in which Mr. Arthur Ware, the architect, has followed Italian precedent in his treatment. There are also views of some recently built county and suburban houses.

Der Architekt (Vienna) has some interesting studies for the laying-out and building of the Palacky Kais at Prague by R. Wels, of Vienna; some designs by Professor Moritz Balzarek, of Linz; and a view of the new Rathaus at Bilin, of which Professor Dr. Friedrich Kick is the architect.

Arkitektur og Dekorativ Kunst (Christiania) gives a view, with plans and elevations, of a new public school at Bergen; premiated competition designs for a railway station; and photographs of furniture designed by architects.

Annali della Società degli Ingegneri e degli Architetti Italiani (Rome) for once is more architectural than engineering, and contains a full series of views of the new Government offices for the Ministry of Public Works and Telegraphs of Mexico, the work of Silvio Coutri.

Bauwelt (Berlin) makes a special feature of modern church architecture in Germany, wherein Romanesque and *Neubau* feeling seem to largely influence the design.

Construction (Toronto) illustrates fully Ottawa's great hotel, Château Laurier, of which Messrs. Ross & Macfarlane are the architects. A bungalow residence in Victoria, British Columbia, forms the text of an article on "The factor of environment in domestic design."

La Construction Moderne (Paris) gives illustrations of the Salon d'Honneur in the French section of last year's exhibition at Turin; a modern house in Venice; and a cottage-house at Fresselines, which is a welcome departure by M. Henri Gray from the usual type of French country house.

The Architect.

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FORTHCOMING EVENTS.

Monday, November 11.

- Architectural Association : Paper on "Marbles used in Greek, Roman, and Byzantine Buildings," by Mr. J. A. Marshall, at 8 p.m.
Surveyors' Institution : Presidential Opening Address by the Hon. E. G. Strutt and other business at 8 p.m.

Tuesday, November 12.

- Royal Sanitary Institute : Discussion on "The Report of the Departmental Committee on Intercepting Traps and House Drains," to be opened by Mr. H. Percy Boulnois, M.Inst.C.E., at 8 p.m.
Nottingham Architectural Society : Fiftieth Anniversary of the Society, Conversazione at the Exchange Hall at 8 p.m.

Wednesday, November 13.

- Northern Architectural Association : Presidential Opening Address by Mr. Wm. Milburn, F.R.I.B.A., at 7.30 p.m.
Edinburgh Architectural Association : Associates' paper on "Town Planning," by Mr. A. Lorne Campbell, F.R.I.B.A., at 8 p.m.
Egypt Exploration Fund : Ordinary general meeting at Burlington House, W., at 4 p.m.

Thursday, November 14.

- Sheffield Society of Architects and Surveyors : Paper entitled "Some Notes on Surveying" by Mr. F. H. Wrench, A.M.Inst.C.E., Lic.R.I.B.A., at 7.30 p.m.
Concrete Institute : Presidential Opening Address by Mr. E. P. Wells, J.P., at 7.30 p.m.

THE STUDY OF ARCHITECTURAL HISTORY.

THE house of B. T. Batsford "has the pleasure to announce the publication of an entirely new History of Architecture by an eminent author, attractively written and richly illustrated."*

It might have been doubted whether at this period there is room for another history of architecture, but a very short inspection of the publication which Mr. Batsford announces will convince the doubter of the fact that there is not only room, but a necessity for a handbook treating of the history of architecture in the manner that has been adopted by Mr. Statham.

It has been too much the custom amongst writers and compilers of architectural history books to deal with the development of architecture as a matter that could be chopped up into divisions, each labelled and called a "style," of which the distinguishing marks were to be found in various treatments of mouldings, features, and ornament that apparently had a particular period or phase of development and might be pigeon-holed and labelled as separate and distinct entities.

In the publisher's circular it is put forward that "it is realised that the time has come when every person of culture is desiring to have the same acquaintance with architecture that is possessed on such other subjects of intellectual interest as history, painting, or music, and Mr. Statham's book has been specially written to impart or increase such knowledge." The publisher in making this statement to the non-professional reader hardly, we think, does sufficient justice to the scope of the new history of architecture.

Mr. Statham's book, carefully studied and assimilated, will give the student of architecture, whether amateur or professional, a very intimate acquaintance with architecture and, what is of far more importance, a comprehension of the development of architecture as the result of the solution of problems of building connected with, firstly, the provision of plans and arrangements for specific needs, and, secondly, with the construction of buildings suitable to the requirements of accommodation, the facilities of the building materials available, and the abilities of the builders to make adequate use of those facilities.

The new history of architecture is, in short, based upon constructional necessities rather than accidentals,

hence we do not find rigid adherence to time or locality when the author is dealing with a practical method of construction; thus in discussing the treatment adopted in the building of domes those of Southern France are compared with earlier structures in Persia or in Greece.

At the same time the progressiveness of architecture in the solution of building problems down to the commencement of the Renaissance movement enables the writer to maintain a fairly regular chronological sequence in the treatment of his subject, and to present the history of architecture as a continuous development in point of time as well as in methods of construction. Mr. Statham has also been careful to explain that architecture is not merely of utilitarian origin, but is the expression of an ideal in which each detail is of æsthetic consequence; thus the reader is led to consider what are the influences and what the treatment of design which have gone to make good or bad architecture.

Although, however, the author is critical in his treatment of history, he does not give an entirely exhaustive exposition of the influences which have gone to form architecture, but leaves a certain field open for the consideration of the reader; thus in calling attention to the varied positions of columns in monumental work, it is pointed out that in Egyptian architecture the columnar effects were all internal; in Greek and Roman architecture the columns emerged from their obscurity and were ranged on the exterior of the temple; in Latin and Romanesque architecture, mainly for structural reasons, the column became again an internal feature; but the reasons for these changes are not explicitly given.

This is, in fact, one of the chief merits, to our mind, of Mr. Statham's treatment of history; it is not a collection of facts, dates, and figures which might be learnt by heart by the student who is cramming for an examination, but it is a critical and thoughtful exposition of the development of architecture in which the reader is given the benefit of the acumen of a learned and keen observer and critic, and at the same time is led to think for himself and to make his own observations and criticisms.

When he does so he will sometimes no doubt differ in opinion and conclusion from the author. He may, for example, not be inclined to agree with Mr. Statham that the typical form of the Corinthian capital is rather Roman than Greek, particularly when he has before him the charming illustration of a Corinthian capital from Epidauros to which Mr. Statham attributes a probable date of 400 B.C. The Bassae example and that of the temple of Jupiter Olympius at Athens might also justify

* *A Short Critical History of Architecture.* By H. Heathcote Statham, Fellow of the Royal Institute of British Architects, Member of the Hellenic Society, and of the Society for Roman Studies, &c. (London: B. T. Batsford, 10s. net.)

him in arriving at the conclusion that the typical form of the Corinthian capital was evolved and settled by Greek artists, although modified in detail by Roman workmen; even the invention of the Composite order he may be disposed to regard as Greek rather than Roman with the example before him of the capital from the temple of Jupiter at Aizani in Asia Minor.

He may also be inclined to believe that Mr. Statham is hardly justified in maintaining the nineteenth century view with regard to the irregularity of plan of the Erechtheion, particularly if he has become acquainted with the fact that many archaeologists are now prepared to admit that a western wing was intended to correspond with the eastern, and he may justly be supposed to ask if it were probable that any sensible architect at any period of history, still less a Greek architect in the days of Pericles, would have been guilty of such an absurdity as to erect a magnificent approach to a building, like the north portico of the Erechtheion, so badly placed that it actually projected beyond the plan of the building to which it is the presumed entrance. It is scarcely possible to doubt, from a common sense point of view, that this north portico was intended by its designer to be the central feature of a façade, symmetrical so far as the conditions of the site would allow, or that it was built before the necessity was recognised that the original intention of the designer was impossible of realisation, although this contingency was accepted when the position of the so-called caryatide portico was settled.

One could go on to suggest other differences of opinion that the thoughtful reader might form, but the possibility does not detract from the admirable character of this critical history whose function is, we are sure, in the desire of the author, to stimulate the intelligent consideration of architecture rather than the plain acceptance of dogma, even from a master of criticism.

We would rather turn to other excellences of this new history. Whilst the masterpieces of architecture which have become familiar by repeated delineation time after time are not omitted, there is a delightful feeling of freshness in the numerous illustrations which the author has included of essentially instructive buildings which have escaped the notice of, or been ignored by, other writers. Mr. Statham, moreover, has not been content to borrow his history from the works of others, but has gone beyond them and introduced to the student the results of modern investigation and research, many of them the individual work of the author.

From the mere point of view of a picture book more than 700 excellent illustrations make the volume of high interest to the amateur and of surpassing value to the professional student. To the latter we may commend this newest history as being within the limits of its size and price the most valuable handbook that has yet appeared in the English language for those who wish to understand the architecture of the past.

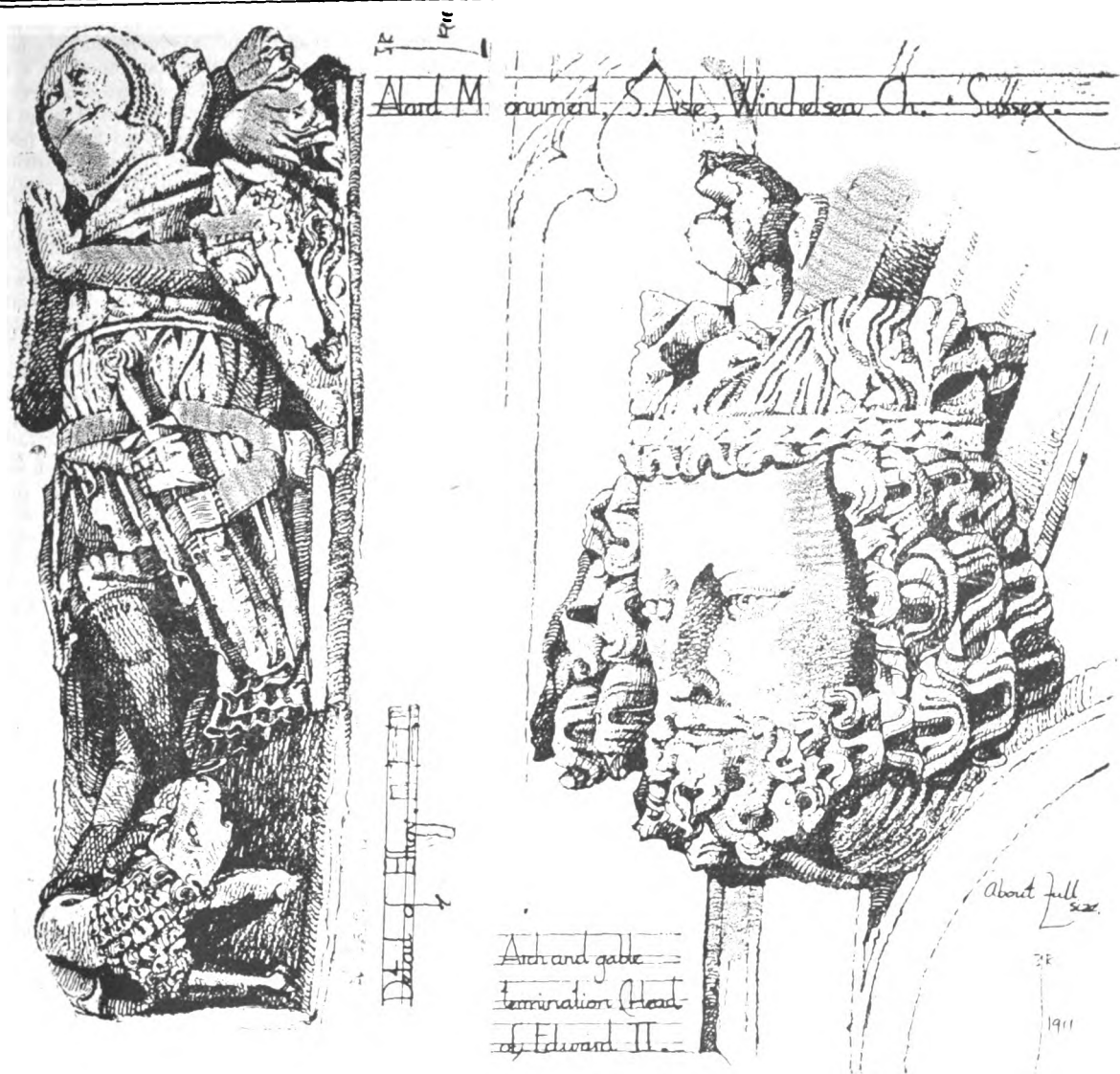
NOTES AND COMMENTS.

THE remarkable collection of drawings with which the walls of the Royal Institute were adorned on the occasion of the opening meeting of the Session on Monday last filled us with a feeling of regret that they could not remain on view for longer than the one evening. We cannot help wishing that the occasional glimpses which are vouchsafed to members of the wealth of draughtsmanship and illustration hidden away amongst the Institute's possessions could be amplified into a series of exhibitions, which would not only be instructive to architects, but, if run on business lines, might be a source of income to the Institute, and would certainly help forward what is eminently desirable, the rapid growth of that dawning interest of the Philistine in architecture which is one of the most encouraging signs of the times and should certainly be accelerated by the Institute to the utmost of its power.

Hall i' th' Wood, Bolton, Lancs., is perhaps one of the best known examples of half-timber building in the country from the multiplicity of drawings, sketches, and photographs of it that have been made and published, but that, nevertheless, does not argue a lack of judgment on the part of the recently retired Professor of the Manchester School of Architecture, Mr. S. Henbest Capper, in selecting the building for the first essay of the School in its publication of a portfolio of measured drawings by its students. Mr. William J. Roberts, the student whose name is appended to the drawings, has done his work with effectiveness of presentation, but without that completeness which should, we think, be the dominant note of such a publication under University auspices. We should have liked to see the first part of the Manchester School's Portfolio of Measured Drawings so complete a record of the building measured that if it should, unhappily, be burnt down, it could be rebuilt in exact facsimile. Not that it need be. Instead of this we have a few excellent drawings which appear to be a student's study of what appealed to him, and his excuse for incompleteness is naive. "The back elevation is so purely archaeological (sic) that it was thought to be hardly worth measuring. The date of it will be somewhere about 1600." The first floor plan and the sections are also presumably "so purely archaeological."

The Manchester Art Gallery is fortunate, and deservedly so, in having received a gift from Mr. Charles Shannon and Mr. Charles Ricketts of five plaster models by Alfred Stevens for his projected decoration for the dome of St. Paul's Cathedral. The *Manchester Guardian* says of these schemes, unfortunately never carried out: "The two reclining figures represent St. John and St. Mark, each with his traditional symbol. The statuettes are of Jael, David, and Judith. All are roughly modelled first conceptions, but they have both charm and significance. What an artist sees and seizes first is an indication of his temperament. In the case of these little studies by Stevens we notice how entirely he was concerned with the æsthetic rather than the human conception of his subjects. Jael's hammer, David's sling, Judith's sword, are merely symbols and their wielders are mere figures, not the individuals, intensely conscious of their mission and perhaps grotesquely human, that Reinhardt would have made of them in a painting or etching. But in both cases a fundamental conception of art is represented, and in these little figures by Stevens we have the sense of rhythm, the power of imaging types purged of individual peculiarities, and—looking at them as sculpture—the sense of mass and line that we call classical. Jael, in fact, has the charm of a Tanagra figure, and the head of Judith is beautifully formed and poised; and the other figures show in their own way the instinct for decorative fitness in which Stevens was supreme among English nineteenth-century artists. The set forms a delightful addition to the collection of modern sculpture which is gradually taking shape in Manchester."

We are glad to note the point of view of Archdeacon Norris, who, speaking at the Art Exhibition at Halifax Technical College, urged the value, even from a material and commercial point of view, of the general education of the public in appreciation of art by means of a carefully, wisely, and reverently chosen collection of pictures, sculpture, and so forth, including, we may hope, architecture. The Archdeacon said that the appreciation of what was beautiful and good was largely a matter of education. He was glad to say that nowadays in the nursery and the schoolroom we tried to surround children with good pictures and artistic decoration, and this would tend to improve the general artistic taste. It was not only the duty of public authorities to see that every opportunity was taken to teach people the power of selection in the matter of sight, but undoubtedly in industrial towns like Halifax, with the trades that were characteristic of the district, it was commercially important that this should be done. Was it seriously supposed that Leeds and



FROM SKETCHES SUBMITTED BY MR. J. R. LEATHART FOR PUGIN STUDENTSHIP, 1912.

Bradford took this matter up merely as a hobby, or did it for fun? Was it ever considered why it was that one town went ahead in textile manufacture, and another town stood still? Ultimately it was to a large extent a matter of design. The other day a prominent Halifax citizen, one of the few who had tried to help art, said in effect that it was not much good trying to put beautiful things before Halifax people, because owing to the dinginess and duskiness and the severity of their surroundings they could not appreciate them. He ventured respectfully to disagree with him. A great many of the working people of the district could appreciate beautiful things, but apart from that, his main reason for wanting works of art to be within easy reach of the public was because they lived in such dingy surroundings.

A rather belated and adjourned report respecting the fatal fire at Moor Lane in the City of London in July has been presented by the Building Acts Committee to the London County Council, which, whilst it justifies the Council, also, we consider, contains some useful lessons. In 1898 the Council served on the owners sealed notices requiring the provision of additional means of escape in case of fire from Nos. 19 and 21 Moor Lane, and Nos. 66 and 67 Milton Street, which were then, with the exception of the basement and ground, first and fourth floors of No. 21 Moor Lane, in the occupation of a firm of printers. The fourth floor of No. 21 was occupied by a firm of ladies' tailors, and the basement and ground and first floors by several other firms. The Council's requirements included a new incombustible staircase in each building and a gangway, with doorway access, between Nos. 19 and 21 Moor Lane, on each of the upper floors. The case was referred to arbitration, and

the arbitrators failing to agree, the umpire issued an award requiring the provision in No. 21 Moor Lane of a new incombustible staircase connected with all the floors and access to the roof from the top floor independent of the staircase, but the doorways and gangways required by the Council were omitted. The owner provided the required access to the roof, but appealed against the requirement for the new staircase on the ground that its construction would involve a trespass on the basement, ground, and first floors, which were in different occupations. The High Court upheld the appeal and remitted the case to the arbitrators, who then issued an amended award requiring some minor alterations of the then existing staircase, which was enclosed with matchboarding, and the provision of balconies between Nos. 21 and 23 Moor Lane, with window access thereto from both buildings. The means of escape were completed in accordance with this award. A staircase leading to the roof from the fourth floor was also provided. The drawings of the work as completed showed the fourth floor to be divided into two rooms by a wooden partition, in which was a doorway fitted with a door. This door was subsequently removed, and a doorway, giving direct access to the main staircase from the front room, was blocked up. The window access to the balcony leading to No. 23 was in the back room close to the doorway in the partition. In 1906 a firm of Christmas card manufacturers took the two rooms. No notice was given to the district surveyor of any of these changes. At the time of the fire a large quantity of celluloid, about 1,600 lb., was stored on this floor, and the outbreak was due to some lighted sealing wax being dropped on to a parcel of the celluloid in the front room. This occurred when eighteen women and four men were employed in the

front room, and fifteen women in the back room, whence the only means of escape to the principal staircase was through the front room. All of those engaged in the front room and two of those in the back room escaped down the main staircase. The remainder went up the staircase leading to the roof, and ran to the left to a part from which escape was almost impossible. Had they turned the other way they could have reached the roof of No. 23 Moor Lane, when they would probably have been rescued. It would appear from evidence given at the coroner's inquest that the failure to use, as a means of escape, the balcony leading to No. 23 was due mainly to the fact that a ventilating fan in the rear wall of the back room drew the flames across the window opening to the balcony, and that this was facilitated by the removal of the door from the doorway in the partition. It would also appear that access to the balcony was obstructed by goods, and that the notice "exit in case of need" had not been maintained. Taking all the facts into consideration, it appears likely that there would have been no loss of life had the owners complied with the Council's requirements. The inquest was held on July 26, 27, and 28 and August 2. At the conclusion of the evidence the coroner addressed eighteen questions to the jury, and the more important answers were to the effect that—(i.) No criminal blame attached to anyone. (ii.) The factory inspector was responsible for seeing that the means of escape were maintained. (iii.) The exits were reasonably safe, but handrails should have been provided to indicate and render safer all routes of escape over adjoining premises, and the second doorway between the front room and the main staircase should not have been blocked up. (iv.) The blocking up of the doorway between the front room and the main staircase and the removal of the door in the partition between the two rooms were not structural alterations. The jury also found that the quantity of celluloid on the premises was too large for one building, and that one of the first things which should have been done on the outbreak of the fire was to switch off the ventilating fan, which, in conjunction with the open doorway in the partition, was, as previously stated, the main reason for the failure to use the balcony provided as a means of escape. We would add that we do not concur in the opinion of the jury that the alterations made were not structural alterations. During the last session of Parliament the Bill promoted by the Council for the regulation of the storage of celluloid was thrown out, but a departmental committee has since been appointed by the Home Secretary to inquire into the questions of the storage and use of celluloid.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE first general meeting of the seventy-eighth session of the Royal Institute was held on Monday, November 4, at 9 Conduit Street, W., Mr. Reginald Blomfield, A.R.A. (President), in the chair.

The Secretary stated that the Council had nominated twenty gentlemen for candidature as Fellows and fifty-two as Associates of the Royal Institute. It was also announced that M. Stanislas Louis Bernier, President of the Société Centrale des Architectes Français, has been nominated for election as Honorary Corresponding Member. It was further announced that the Council, in the exercise of their discretion under By-law 78, have admitted the Hampshire and Isle of Wight Association of Architects to alliance with the Royal Institute.

Mr. Blomfield then gave the following

Opening Address.

It has become the custom of this Institute to look to its Presidential Addresses for announcements on matters of serious interest to the profession, for the foreshadowings of policy, sometimes for sanguine anticipations of ideals that we should all like to see realised. You will recollect the frankness of my predecessor in this chair, and the zeal with which he attacked the difficult problems which confronted him during his term of office. Many circumstances combined to make his tenure of office more than usually full of

arduous situations. I who have the honour to succeed him do not look for a series of alarms and excursions. Rather, so far as I can see, the time has come for a steady consideration of our position, and for a period of serious, if less brilliant, development on practical lines. I hope I shall not disappoint you if I say that I have no heroic policy to offer you, no infallible panacea for the many difficulties that lie before us; but I shall ask you to follow me in the suggestions which I shall put before you as to the present position, and to help me on your part with your clear, unprejudiced, and close attention.

The points which I would ask you to consider with me to-night are: The position of this Institute; the position of the architect; registration; and education. I will deal first with the position of the Institute.

We have in the last two or three years incurred a large expenditure, and this has induced some anxiety among our members in regard to the future. I think I can safely reassure any member who has an uncomfortable feeling of insecurity. As a body this Institute has never been so strong as it is to-day. The total of its membership, including Licentiates, amounts to some 4,700, in addition to the numerous class of probationers and students from whom the members of the future will be drawn; and I would remind those of the latter class to whom the Insurance Act applies that an Architects' and Surveyors' Approved Society under the Act has lately been formed by the Architectural Association, with the approval of this Institute and of the Surveyors' Institution. The net-work of Allied Societies, working in close relation with the central body, now covers not only the United Kingdom, but practically the whole of the English-speaking Dominions, and your Council has recently taken in hand the consideration of the relations of the Allied Societies *inter se* and to this Institute, in order that no district shall be without a representative body to assist the architects practising within its boundaries. The constant reference to the Institute in matters of public importance I need not touch on, because it is a matter of common knowledge to all of you. In regard to our financial position, as freeholders of these fine premises which have recently been enlarged and improved, the Institute is in a more secure position than it was two years ago, when it was merely the holder of a lease of half these premises with some fifty years to run. Such a serious undertaking has necessarily put a temporary strain on our finances. In the years 1909, 1910, and 1911 the Institute spent about £31,000 on the purchase of these premises and their repairs and re-arrangement, skilfully carried out by our Hon. Secretary, Mr. Hare. In addition to this, the Town Planning Conference involved a capital expenditure of £2,235. To meet these liabilities the Institute had in hand £21,095 capital. The result was that during these years we had to borrow from our bankers the sum of £12,144. But the soundness of our finances is shown by the fact that by the end of last year our indebtedness was reduced to some £9,000, and we have reason to believe that in this and following years an annual surplus of income over expenditure will enable us to reduce our debt by at least £1,000 a year. I need hardly say that the sooner the whole of this debt is wiped off the better, and this is the more necessary as there still remains to be dealt with the mortgage of £4,000 which we took over with these premises from the Architectural Union Company. There is much that the Institute would like to do, and yet hopes to do in the future, which your Council do not feel justified in undertaking till this debt is cleared: our splendid architectural library, for example, perhaps the finest in this country, should be kept up to date by the purchase of the best contemporary publications both in this country and abroad, but at present your Council is not always able to follow the legitimate representations of the Literature Committee for financial reasons. Then there is the pressing question of the payment of our Examiners, long ago recommended by the Board of Architectural Education, but as yet unrealised for the same reason, and all that the Institute can offer to these gentlemen who place at its disposal their highly skilled and valuable services is its platonic, if very genuine, gratitude. I would remind you also that the promotion of registration, whatever form it may take, must in any case mean the expenditure of money, possibly of a good deal of it. I venture to suggest one obvious means of adding to the sinews of war, and that is that those Associates who are qualified for the Fellowship should take up their Fellowship without further to do. The status of a Fellow of the R.I.B.A. is assuredly a distinction, and I suggest to you that all our Associates ought in due course to proceed to the

Fellowship, and that the senior Associates should give a lead to their juniors by taking up their Fellowships at once. I appeal to you as good sportsmen to lend a hand in this very practical way, having regard to the facts that I have now laid before you. I would say again that our position is perfectly sound, but it is only common sense to deal with our existing liabilities before we embark on large enterprises, whose end, however desirable, must be to some extent problematical.

The position of the architect as a professional man has given ground for a good deal of anxious consideration in the last year or two. Adverse verdicts have been given in the Courts, which appear to saddle us with unfair and impossible responsibilities, and there can be no doubt that the position of a practising architect to-day is more difficult than it was forty years ago. He is expected to know a great deal more, and to do a great deal more for his money, than was expected of his predecessors in the halcyon days of the seventies. Applied science has developed so fast and in so many directions that it is impossible for an architect to keep pace with every branch of it; and, beside all this, he has his own art to master. For when all is said and done, the first business of an architect, that which differentiates him from other men, is his power and knowledge of design; and that, in the chaos of modern styles and the kaleidoscope of fashion, is not less but more difficult to acquire now than it was 150 years ago when everybody worked in one manner as a matter of course, and every village builder knew the Orders. And it is more difficult than it was fifty or sixty years ago when hygiene was a negligible quantity, electricity as a commercial power unknown, and the builder was a man who really knew something of the practice of building. At the same time, I think there has been an unnecessary scare in this matter. We architects have, and have always had, our responsibilities to our clients, and, provided an architect knows his business, watches his work, and takes due care of his clients' interests, I do not think his position is one of greater danger than that of other professional men. The pressure of competition is keener than it used to be, and the standard of attainment is higher, but this is due in the one case to causes beyond our control, in the other to our own efforts; and what we have to do is, on our part, to qualify ourselves for our responsibilities, and to stimulate in the public a more intelligent appreciation of the services that an architect can and ought to render. If the public understood that an architect is an individual with the necessary limits of an individual, and not merely a wholesale *entrepreneur* on the one hand, or a building policeman on the other, there would be less of the regrettable misunderstandings that sometimes occur in the practice of architecture—but architects should not forget that the only effective passport to the appreciation of the public is the merit of their own personal work, and that if the profession of architecture is to receive a higher recognition in the State than it obtains at present, it can only do so by insuring a high standard of education and attainment among its individual members.

This brings me to the thorny question of registration. In this matter, if you will bear with me, I wish to explain certain developments that have formed part of the history of this Institute. Over twenty years ago I had the honour to be an Associate Member of Council, and about that time a move was made in the direction of registration, which appeared to some of us, old as well as young, to be heading off architecture into a cul-de-sac of unmitigated professionalism. But since those days much water has flowed under the bridge. Free discussion has cleared away the misunderstandings of earlier days, the Institute has taken a very active and, if I may say so, in regard to its members, self-sacrificing part in the reorganisation of education, and there has grown up a fairly general consensus of opinion that registration, in some shape or another, is desirable, not only in the interests of architects, but in the interests of the public. So far this Institute is pledged to the policy stated in the report of the committee of 1907, and your Council has for some years endeavoured to give effect to that policy. Your Council can hardly hope to produce a scheme that will at once satisfy all, or nearly all, shades of opinion, and also be within the range of practical politics—this last is important—for I think you will agree with me that, if you run a horse, you should run him for all he is worth, and that it is unworthy of serious men of affairs to waste time and money on mere *ballons d'essai*. We are after a practical scheme, one that will protect both the public and architects. Various solutions have been proposed. So far none of them have met with general acceptance, but it must not be supposed that the labours of the last few years have been wholly

in vain. They have at least shown us some of the difficulties in the way, and have brought it home to thoughtful men that this is a very difficult and intricate problem not to be settled off-hand, and that if a real and satisfactory solution is to be found for it, that solution will have to be built up by careful and exhaustive consideration of the case in all its aspects; of what is required by the public, of what is due to the architect, and of the effect of any such scheme on other professional bodies whose interests may be affected. And if after this careful consideration it is found to be impossible to go quite so far as some of the more ardent of our registrationists might desire, I would remind them that half a loaf is better than no bread, and I would appeal to them, and, indeed, to all of our critics, to have patience and not to take the bit in their mouths and bolt. It is no use striking before the iron is hot, and it has become clear that there are many issues to this question, all of which must be dealt with before it will be possible to reach the psychological moment of solution. The conditions of modern society are so complex that it is impossible to deal with any of its problems in watertight compartments. What may appear to us as very clearly in the public interest may seem less convincing to our neighbours on the other side of the fence; and the experience of history is conclusive that drastic changes are not to be made *uno actu*. If such changes are to take their permanent place in the social organisation, they will only do so as the result of much previous effort, of anxious thought, of the slow attrition of those awkward angles which have split up many a well-meant scheme of reform. One of the first acts of your new Council has been to appoint a large and carefully selected committee to consider the whole question of registration, and it has strengthened it by the addition of a number of representative members from the provinces. I would ask you to give this committee time to deal with the question in all its bearings, and, when the recommendations of the Council come before you, not to look for impossibilities, but to give it your careful consideration as practical men of affairs, and with an anxious regard to the future of architecture. For, after all, whether members of the Council or not, we are but trustees for the next generation, and it should be our business to hand on our inheritance, not tarnished or diminished, but greater and more splendid, because it is held on the terms of a higher standard of attainment. On one point I feel sure we shall all agree. The object of a registration scheme should not be to make architecture a close profession, regardless of professional skill. We do not want to repeat the history of the Trade Guilds in their later days, when their object was to surround their members with a jealously guarded ring-fence of monopoly. Our object is to put a stop to incompetence, and to establish and maintain a reasonable level of accomplishment, and to see that that level is reached by those who undertake the very responsible work of an architect. There is not a man in this room who would say "*la carrière ouverte aux talents*," but what we insist on is that the "talent" should really be there, and that is the substantial issue to which registration should be directed. It should be really and effectually the hall-mark of professional competence.

So, by this roundabout way, we come back to the vital question of education, or, rather, as I should prefer to put it, a sound and thorough professional and artistic training as the basis on which any form of registration must be founded. If we are to obtain public and formal recognition of the fact that architecture is not an art that can be practised by Dick, Tom, and Harry with advantage to the community, and that there is a difference in kind between the work of the trained designer and the architectural efforts of the gentleman who combines the practice of architect, auctioneer, and estate agent, we shall see to it, not only that our present standard is maintained by all who enter our ranks, but also that it is slowly and surely raised, so that there can be no question as to who is and who is not qualified to undertake the work that legitimately falls to an architect.

It is to this object that the Institute, through its Board of Architectural Education, has steadily applied itself during the last few years. Sir Aston Webb was the first and most admirable Chairman of that Board. I had the honour of succeeding him, and we can both testify to the unswerving sympathy and support which the Institute, through its Council, gave to that Board, and thereby enabled it to carry out the important and far-reaching reorganisation of architectural training, which has been quietly going on for the last few years. The syllabus of training for architect-

tural students has been thoroughly overhauled, and quite recently a serious attempt has been made to render our examination a more effective and intelligent test of architectural capacity, and also a real stimulus to the artistic enthusiasm of our students. Design, the adequate invention of buildings which are good to live in and to look at, is, after all, the essential object of our training. Many studies are necessary as subsidiary to this, but the aim of our training must always be to make our students competent architects, artists to whom the methods and materials of buildings are as his canvas and colours to the painter, or his bronze and marble to the sculptor. The initiation of a test in design, which is to some extent competitive, is an important step forward and a further development of that reorganisation of our methods of training which has been one of the most valuable constructive works carried out by the Institute during the last few years. And by design I do not mean scene-painting. Under modern conditions it is more than ever imperative that power of design and knowledge of construction should go hand in hand—that the architect should have the technical knowledge of building necessary to realise the flights of his imagination. Where the engineer stops at construction, the architect, as an artist, sees further possibilities of beautiful form and its combinations, and he should possess sufficient knowledge, at any rate, to start the realisation of these possibilities.

At the meeting of the British Association in September last Professor Archibald Barr gave a very able address on the duty of the engineer to the community, and in the course of it called attention to the unfortunate severance of engineering from artistic design. The engineer, he said, takes a too exclusively utilitarian view of his calling, and architects have not sufficiently mastered the science of steel construction to be able to design in it freely. I think there can be little doubt that Professor Barr is right in his contention; and the conclusion to be drawn from it is that in the modern practice of architecture the necessity of the study of scientific construction becomes more and more urgent. That is a point that will not be lost sight of in our scheme of architectural training, and I may assure you that on this point our Examiners are adamant. Yet there are one or two considerations which I venture to offer, to reassure the old-fashioned lover of bricks and mortar. I do not believe that the whole future of architecture rests with steel construction or reinforced concrete, any more than I believe that the whole future of painting lies with the post-impressionists or the Cubists. Brickwork and masonry must always hold their place in building, and though architects will do well to avail themselves of all the resources of applied science, that is no reason for throwing up their familiar tools and rushing headlong into methods, however brilliant their promise, which have not yet stood the test of time.

We artists have to live in an age of science, and science is steadily invading the territory of the arts; not content with brushing us aside as people of no account, it has stolen our one ewe lamb—it has annexed the term "beauty" for its own purposes, and misled the public by using it in a sense of its own. In consequence of this insidious misuse of the middle term, we artists wake up to find our work judged by irrelevant standards, and condemned accordingly. One hears the term "beauty" applied to subjects so diverse as St. Paul's or Westminster Abbey, to the steel-work of the Gare d'Orléans, or to some complicated piece of machinery. Now, it is obvious that the same thing cannot be meant in each of these instances. In the case of the buildings, we mean that our sense of rhythm and proportion, our enjoyment of light and shade and the like are gratified; in the two latter cases that we derive intellectual satisfaction from the exact solution of a problem of construction or mechanical function; and it is only because we are lazy or careless of speech that we talk of "beauty" in the case of the steel roof or the steam engine. There is, of course, a borderland, where our pleasure is partly æsthetic and partly intellectual, such as the scale of a great dam, or the lines in perspective of an ironclad. But from the point of view dealt with by Professor Barr I suggest that the term "beauty" as applied to steel construction means technical beauty; that is, that its appeal will be to the intellectual satisfaction given by perfectly efficient work, rather than to the æsthetic enjoyment to be derived from the "ordonnance" of noble architecture. One is, therefore, the less daunted, and I do not think that architecture is going to be stranded high and dry by the engineer; but I heartily endorse Professor Barr's appeal for more thorough study of construction and for closer co-operation between the engineer and the architect. The

two should pull together, and should do so from the first. It is no use asking an engineer to design a bridge, or even a shopfront as was recently suggested, and afterwards calling on an architect to invest it with "artistic merit." Both architect and engineer will have their views on the main form and distribution, but they will have studied the problem from different points of view, and it is only by laying their different points of view together, before the treatment of the problem as a whole is decided on, that it will be possible to attain the unity of effect essential to monumental architecture.

I would take this opportunity of expressing our appreciation of the admirable spirit in which several of the Universities have endeavoured to give effect to the Institute scheme in their schools of architecture. The control of the Institute over the training of architectural students has been placed on an efficient basis by the organisation of the system of external Examiners. The Institute has been brought into satisfactory relations with the Universities, and is now recognised by them as the official centre of reference for questions concerned with the training of architectural students. We have our representatives in the schools of London University, the Architectural Association, Cambridge, Manchester, Liverpool, Sheffield, Glasgow, and Edinburgh; and, finally, at the invitation of the Board of Education at Whitehall the Institute has undertaken to conduct next year the examinations in architecture of candidates in the National Competition of Art Students. The horizon of the work of this Institute is steadily widening, and the part that it is called on to play in the training of architects becomes each year of greater importance, of vital importance, to the next generation of architects, and scarcely less so to the public and to our own members, because, as I have ventured to assert already, trained technical ability must be the basis of statutory recognition.

In this branch of the work of the Institute prospects are very much brighter than they have been hitherto. The Jarvis bequest has placed at the disposal of the Institute annually a scholarship of £200 a year tenable for two years; and within the present year, through the generosity of the Commissioners of the 1851 Exhibition, the new School at Rome, long dreamt of by this Institute, has been established by Royal Charter. The first instalment of the building is already in hand, and a scholarship of £200 a year tenable at this school for three years is to be awarded annually. The Institute has offered its hospitality to the Commissioners in regard to the examination for this scholarship, which will be the blue ribbon of the year. The jury will be the Faculty of Architecture, all of whom are members of this Institute. In these scholarships, and in the gold and silver medals of the Royal Academy, not to mention other scholarships and prizes, there are solid inducements to tempt the young man of genius out of his hiding. The importance of the scholarships tenable in the School of Rome will be obvious to all who recall their own days of studentship, those aimless and often solitary wanderings on the Continent, pleasant enough as a sketcher's pilgrimage in search of the picturesque, but of little value as artistic training, owing to the absence of intellectual discipline and authoritative guidance. Indeed, as a student of the development of architecture, I am sometimes tempted to attribute the weak points of the architecture of the last fifty years to the habit of indiscriminate and undisciplined sketching. I regret to admit that we have all of us done it: sometimes, it is but fair to say in self-defence, from the sheer pleasure of drawing some very drawable object—the sheer joy of draughtsmanship—more often, I fear, from a certain laziness and disinclination for the hard thought involved in the critical analysis of architecture. The results, alas! have too often been an unlicensed orgy of details snatched from every land and every style. But the sketching and measuring of actual buildings with a clearly realised object, and carried out with the aim of artistic analysis, becomes of inestimable value to the student, especially when checked by the free discussion of students working together. For the first time students will have the chance of working together and in touch with their brethren the painters and sculptors in that city which must always be the mother of the arts. The School at Rome may take years of patient effort to perfect, but we may look for great things from it in the next generation. One of the most serious difficulties in the modern practice of architecture is the absence of tradition, the want of a common method and of a recognised standard of attainment. It is not too much to hope that in lapse of time it may be the privilege of the students at our School

at Rome to restore this method and standard. That ideal is still far distant, and to complete our programme we must go further afield and enlist the help of all who care for our progress in the arts. I think the time has come when closer attention than it has hitherto received is due to the organisation of training in the arts in this country. Excellent work is done in our schools, but the schools are not sufficiently organised *inter se*, and there is need for further development both in regard to this and also in regard to the advanced stages of training in the arts. Our schools bring the students up to a certain point, and far ahead for the brilliant few there will be the artistic paradise of the School at Rome, but there is an interval between these stages to be bridged over, so that others, not among the brilliant few, yet good men too, may have the benefit of the most advanced training in design, with all the resources of a great establishment and the benefit of the skill and experience of the most competent artists. I believe that the want can be met by the development of existing institutions, but it is one that will require very serious and anxious consideration, in co-operation with such educational establishments as the Royal Academy.

In this short survey of the present situation of what I may call architectural politics I have endeavoured to indicate a certain unity of idea, and even of fact, that underlies the whole position. If the architect is faced by graver responsibilities than heretofore he must meet them by mastering his business and attending to it. This means more thorough training. If as a profession we are to succeed in effecting such further official organisation as will protect both the public and ourselves from the depredations of poachers, the foundation-stone of that organisation must be systematic professional training, and it is, and will always be, one of the most responsible duties of the Institute to see that that training is really efficient, and its standard steadily maintained. In saying this I do not for one moment imply that our present methods of training are not efficient. They are efficient, whenever they are properly applied. The mischief is that they are not universally applied, or, to put it another way, that they are not insisted on in the case of all who set out to practise architecture. The strength of a chain is its weakest link, and however strong a profession may be in individuals it is the minimum of excellence that determines its position with the public. Thus it is that, by insistence on this training, with its corollary of a widespread level of accomplishment, we may hope to build up in the mind of the public a real understanding of architecture. I fear that, until that is done, we shall continue to suffer from the unfortunate vicissitudes of art in this country, those failures of method and intelligence which result in constant disappointments, only relieved at rare intervals by some effort of individual genius or patriotism. I will not dwell here on the alarming architectural results that may arise from the bureaucratic instinct, that growing centripetal tendency in our State and municipal departments which deprives the public of the use of the best ability in the country and so far hinders it from getting the best value for its money. Nor need I enlarge on such matters as the lack of organised protection for our national monuments. A Bill for their protection is now being considered by a Committee of both Houses, and you will have fresh in your memory an astonishing piece of vandalism which was only rectified at the last moment through the munificence of a distinguished statesman. Mistakes which are afterwards a source of the keenest regret seem to slip through by accident. In those far-distant days, when real ability and solid attainment will be the condition precedent to the practice of architecture, one may hope to see these evils remedied, because a sense of the place and value of architecture will be widespread among educated people. The serious importance of this art in the State will be realised, and with this keener sense of the gravity of the problems of architecture fuller trust will be given to those whose high calling it is to practise the art.

Lastly—and this time it really is lastly—there is the relation of the architect to himself. So far I have been discussing his position in regard to the public. But more important than this is his own attitude to his career, the point of view from which he regards the work of his life. There is a real danger, in all this whirl of architectural politics, of our forgetting that first of all we are artists, and that the art which we practise is a very great and a very old one. The cares of business, the keenness of competition, the feverish haste of modern work, are apt to reduce the lamp of art to the merest flicker if they do not put it out altogether. Those of us who have wide experience of practice

know how difficult it is to keep that lamp alight, but here I am addressing myself not to my seniors and contemporaries, but to our younger members: to those who will take our places and carry on our work. Scholarship and research have always been among the best traditions of this Institute. I need only recall such names as Donaldson, Cockerell, and Penrose, and remind you that whatever view one may take of the historical justness of the Gothic Revival, there can be no question of the intense enthusiasm that inspired the labours of such men as the younger Pugin, Street, Burges, and Nesfield. If you turn over the pages of the earlier volumes of our "Transactions" you will find papers on matters of serious interest, marked by a learning and ability that give them a permanent value in architectural literature. I hope, and I do not doubt, that that tradition will be worthily maintained by the rising generation. Current politics may be fascinating, but they are the outside of the cup and platter; they are a very poor substitute for that patient forging and perfecting of your artistic armament which will enable you later to practise your art with the enjoyment that comes of real mastery. And to those that have enthusiasm this labour will be a perennial delight, the joy that is to be won from the study of past art. Who of us, after all, does not look back with vivid pleasure to those wrestlings with the mysteries of some great cathedral, quiet hours with pencil, note-book, and two-foot rule spent in some exquisite chapter-house, long autumn rambles among the time-worn buildings of historic cities? These things are the privilege of the architectural student, and it is this touch with the past that gives to our work its abiding interest. You may recollect the old Greek game of the Lampadephoria, where runners took torches lit at the altars of Prometheus, Athene, and Hephaistos, and passed them from hand to hand till they reached the winning post. That, gentlemen, is our position. It is our business to hand on the torch of architecture. Some of us may be getting old and stiff in the joints, and may have to content ourselves with painfully nursing the flame. It is for you of the younger generation so to train yourselves in your calling that, when the torch is passed into your hands, you may fan it to more vigorous life, and enable it to shine again with all the splendid brilliancy of the great ages of architecture.

Lord Plymouth said it was his privilege to move a very hearty vote of thanks to the President for the very interesting and able address which he had just delivered on the opening of the seventy-eighth session of the Royal Institute. The President had made a most interesting survey of the present position of the Institute and of the general future policy, both from its administrative and educational sides. Those were matters which he had no claim to criticise, even if he desired to do so. Perhaps there was one matter which he might refer to, and it was a matter which came more vividly to one's mind by looking round the walls of that room and seeing the drawings there displayed, and it was as to the very large part played by ancient buildings and ancient monuments in the architectural interest of their surroundings. The President had reminded them that the Government had introduced a Bill into Parliament with the intention of dealing with the preservation of ancient monuments. The Committee was now sitting, and had not yet reported. But he would like to recall to those present that evening one or two great difficulties which confronted that Committee in dealing with this question, and he would make an appeal to the Institute with regard to it. There were two extremes which confront the Government. One he might describe as the method hitherto practised in this country, viz., leaving alone those responsible for ancient buildings and monuments (whether as trustees of more or less public buildings, or whether they be private owners), with the hope and confidence that they are alive to their responsibilities and will do their best to keep them in a proper state of preservation. Although there are existing by-laws dealing with the preservation of our ancient monuments, they exercise so very limited a control that it may fairly be said that we in this country go to the extreme of leaving the question alone. On the other hand, they were constantly having quoted to them the practice of other nations; but he very much doubted whether the powers there conferred had been so very successful in the treatment of ancient buildings in large European countries. At any rate, they in this country might profit by that experience, while not hurriedly adopting organisations which they might find not only did not suit them here, but had not been completely successful in those countries where they have been practised. The nation, he ventured to hope and believe, were approaching this question with care, and the Committee

were making a great endeavour to constitute some organisation which will in the first place assist those who have the responsibility and care of ancient monuments in getting expert advice in dealing with those buildings. One of the greatest difficulties of all was to set up any advisory board which would have the complete confidence of the country, and whose advice and final decision will carry with it the general consensus of those interested in these buildings. It was in connection with that matter that he would like to make an appeal to the Institute. After all, though there are representatives of archaeological societies who might well belong to such an advisory board, it was to the architects who had studied the construction and various methods of building, ancient and modern, to whom they would have finally to turn for the preservation of ancient monuments. It would, he thought, be agreed that taste and knowledge had changed in the architectural profession more quickly because those in it had studied the question more deeply; but taste had changed throughout the whole country in the last half-century. Previous to that time some eminent architects had more interest in the construction and what they thought was the permanent stability of a building than reverence for the ancient stones. But undoubtedly things had changed very much; there existed a general feeling among the public that now they have a duty to perform, and that it was necessary to take all the steps they could towards the preservation of those ancient buildings. It was to the Royal Institute of British Architects, as the leading architectural body, that they must turn for architectural advice. Personally he had not only paid a great deal of attention to the subject for some time past, but he had been engaged just lately in some Parliamentary Committee work in regard to it. He could only venture to say that, so far as he could see, they were proceeding with great care and great caution, and were prepared to turn to those whose training and experience has given them the right to the final word how such ancient monuments and buildings should be treated.

Sir Aston Webb, R.A., in seconding the vote of thanks, said they were all delighted to see Mr. Blomfield in the chair, and while they congratulated him they also congratulated themselves on having got him. They knew him as an architect of distinction, an architect who had great literary gifts and had written on English and French Renaissance, and one who had taken also a very high University degree. Mr. Blomfield had another side to his character, viz., that he was a good all-round sportsman. When the Royal Academy students have their annual cricket match at Lords their first desire is to have Mr. Blomfield to play; indeed, he secured once over a hundred runs for them. He was also an excellent rider to hounds and a fine lawn-tennis player. In a word, he was an excellent all-round man. It was commonly asserted that the practice of architect produced one-sided men. The charge was refuted in Mr. Blomfield, who was, he might say, a polygonal President. They were glad to see him there for another reason. Mr. Blomfield could be looked upon as a symbol of reconciliation among the members. They of the Institute might feel inclined to say, "This my son was dead, and is alive again." Now they had got him they intended to keep him and to make the most of him. It was a strange nemesis that the first thing that their President had to do was to form some scheme of registration. But they were united now, and he believed there was a determination among the members of the Institute, whether they believed in it or not (and he for one did not do so) to see whether by putting their heads together honestly and sincerely they could not draw up some scheme. They would then submit it as a means of stopping that long business which has been going on for years and years, and of which they were all getting sick. They would like to see the Institute undertaking matters more advantageous to architecture and to their members. Mr. Blomfield probably looked upon education as the thing with which he was most largely concerned. They knew that he largely helped in preparing the scheme of education now in process of adoption, and he had also just adumbrated the possibility of some advanced training, which might take the form of a diploma course. Everyone would hope that something might be done in the matter. Mention had been made of the Royal Academy; he (Sir Aston) might say, although he possessed no authority to make any announcement, that he knew enough to promise that the Royal Academy would give a sympathetic hearing to any proposal. Indeed, the Academy were far more ready than was generally supposed to listen to such schemes. Part of the work of the Royal Institute was the care of those gentlemen who had fallen in the race.

He might mention that the Architects' Benevolent Society would be extremely glad to have new subscriptions. Another important feature of their work was education. Here they were full of hope that they would have in the future a better-trained body of architects than in the past. No great buildings would be designed unless there grew up men who would help one another. He seconded very gladly the vote of thanks.

The vote was then carried by acclamation.

Mr. Reginald Blomfield briefly acknowledged the vote of thanks. In conclusion, he drew attention to the most remarkable collection of drawings by Bibieni and others hung round on the walls, which had been presented to the Institute through Sir Charles Barry by Sir J. Drummond Stewart in 1838.

The next meeting of the Institute will be held on Monday, November 18, when Mr. J. L. Ball will read a paper on "Bath and Wells."

ILLUSTRATIONS.

SMALL HOUSES IN EAST ANGLIA.

CLUB HOUSE FOR DOVERCOURT SPORTS CLUB, LTD.—This building has been recently erected upon the grounds of the Dovercourt Sports Club, which has an area of about two acres in a charming position directly facing the sea, of which an excellent view is obtained from the windows and loggia. The accommodation consists of a large entrance hall, with bar attached and cellar under, with servery to dining-room, and lounge and reading-room, which has a beamed ceiling and fine Elizabethan fireplace and open grate built in 2-inch red bricks; a fine billiard-room, ladies' and gentlemen's dressing-rooms, bath-room, shower bath and lavatories, smoke-room, &c., with kitchen, pantries, &c., for steward. The exterior is finished in cream rough-cast plaster, woodwork dark oak, and roof covered in dark-red sand-faced tiles and tile hanging. The building has been well carried out by Messrs. Blay, Ltd., of Dartford and London, the furnishing by Messrs. Frasers, Ltd., of Ipswich, and the whole from the designs and under the superintendence of Mr. H. Steward Watling, architect.

MANOR CLOSE, LOWESTOFT.—This house is about to be erected at Lowestoft, and faces almost due south, giving a charming aspect from the verandah. The plan is somewhat unique, being of an L shape with an octagonal entrance hall, panelled with oak, from which the staircase is recessed in an alcove. There is also a fine general sitting-room some 25 feet in length, and other rooms in proportion, the whole of the woodwork of which is of oak. The exterior is finished in cream rough-cast plaster above the antique red-brick plinth, the chimneys being built to match. The timber work is of rough-surfaced oak, with oak piers projecting, and the gables and roof covered with dark-red sand-faced tiles. The oak throughout is oiled and finished antique, the garden being laid out in keeping with the general style of the building. The contract has been secured by Mr. Styles, and the plans have been prepared by Mr. H. Steward Watling, under whose superintendence the work is to be carried out.

THE BUNGALOW, IPSWICH.—This bungalow, now in course of erection by Mr. F. Read, builder, Ipswich, is from the designs of Mr. H. Steward Watling, architect.

THE CROFT, LOWESTOFT.—This detached residence has been recently completed by Messrs. A. G. Beckett & Son, of Oulton Broad, under the superintendence of Mr. H. Steward Watling, architect.

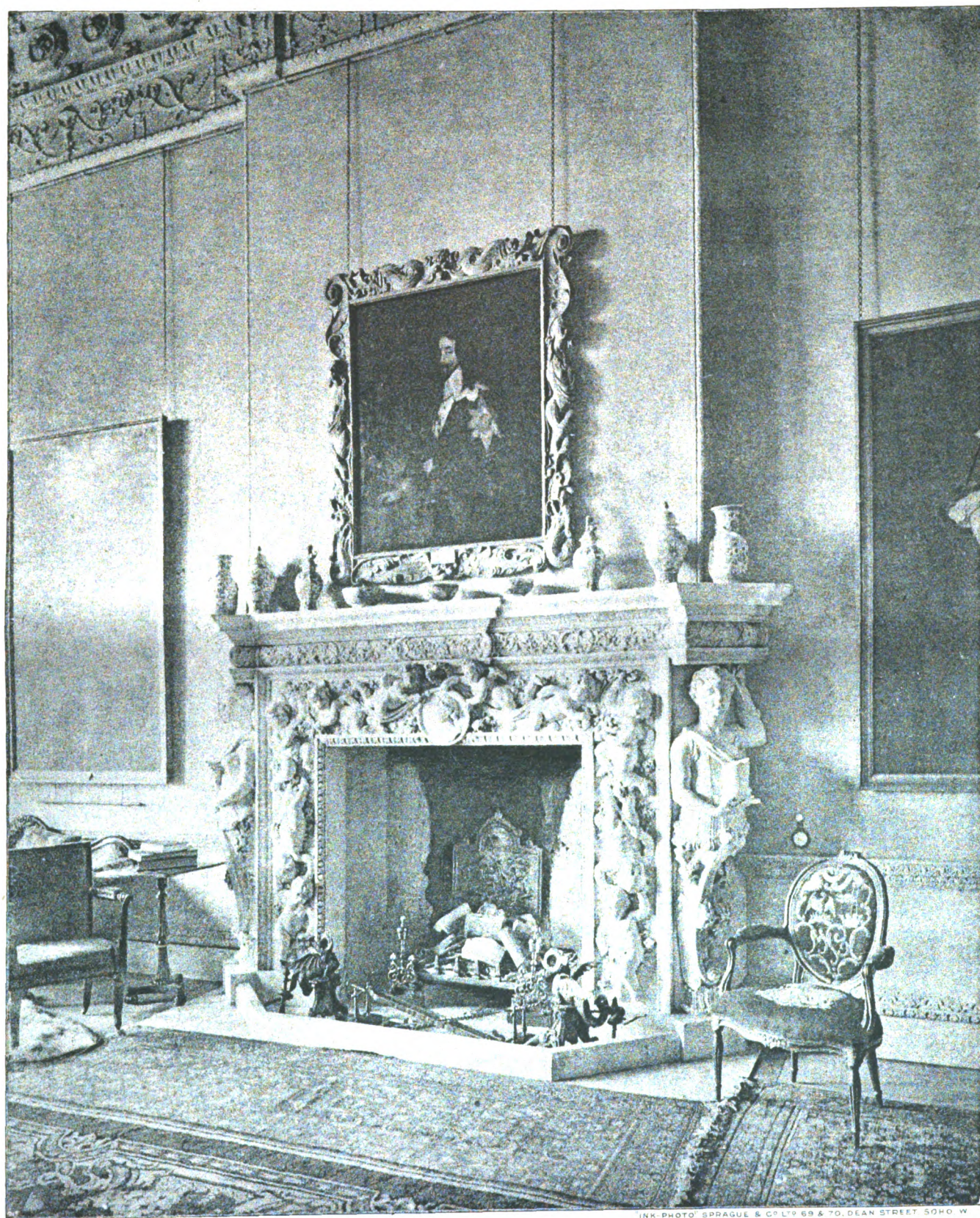
THE GABLES, OULTON BROAD.—This residence and buildings have just been completed by Mr. E. Neech, of Oulton, from designs by Mr. H. Steward Watling, architect.

HOUSE, GREAT FRONKS ESTATE, DOVERCOURT.—This house, being the first of forty houses to be erected on this estate, is in course of completion by Mr. Edw. Saunders, builder, Dovercourt, from designs by the estate architect, Mr. H. Steward Watling.

CLAYDON HOUSE, CLAYDON, BUCKS.

OUR views of the interior of Claydon House are referred to by Mr. Bullock in his article on "Interior Decoration" in this week's issue.



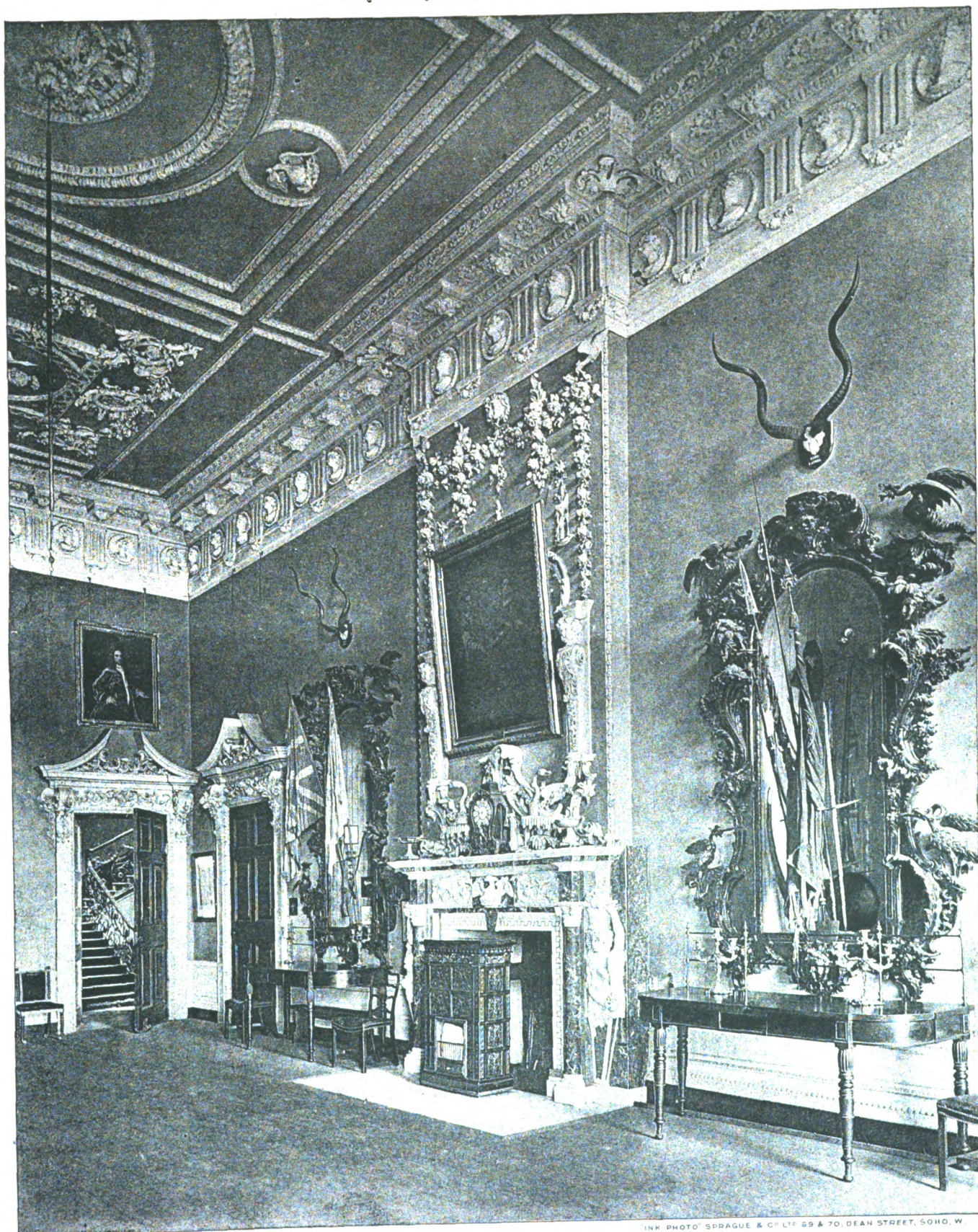


INK-PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET SOHO, W.

CLAYDON HOUSE, CLAYDON, BUCKS THE SALOON CHIMNEY PIECE.



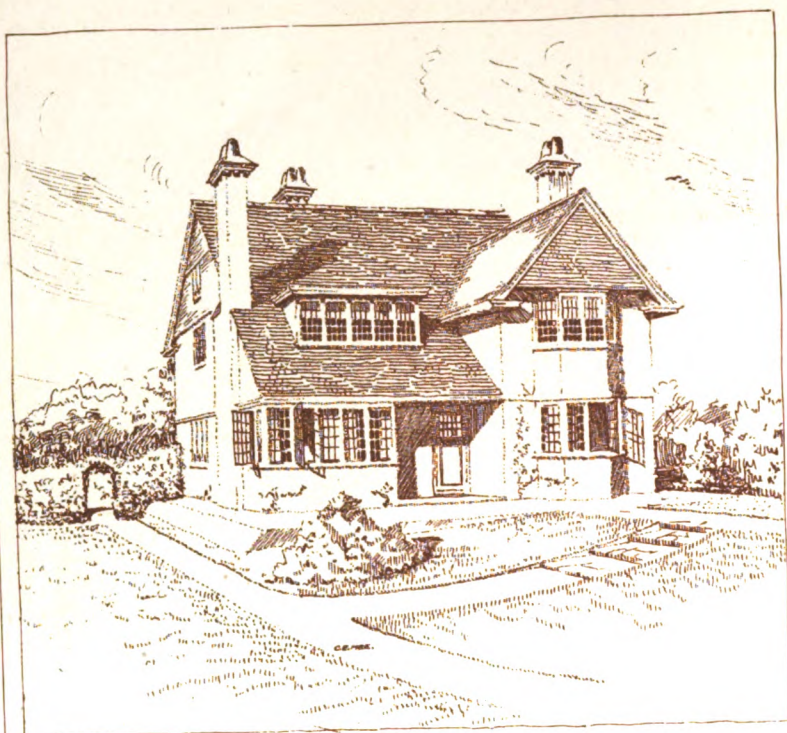
The Architect, Nov. 8th 1912.



INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

CLAYDON HOUSE, CLAYDON, BUCKS.: THE NORTH HALL.

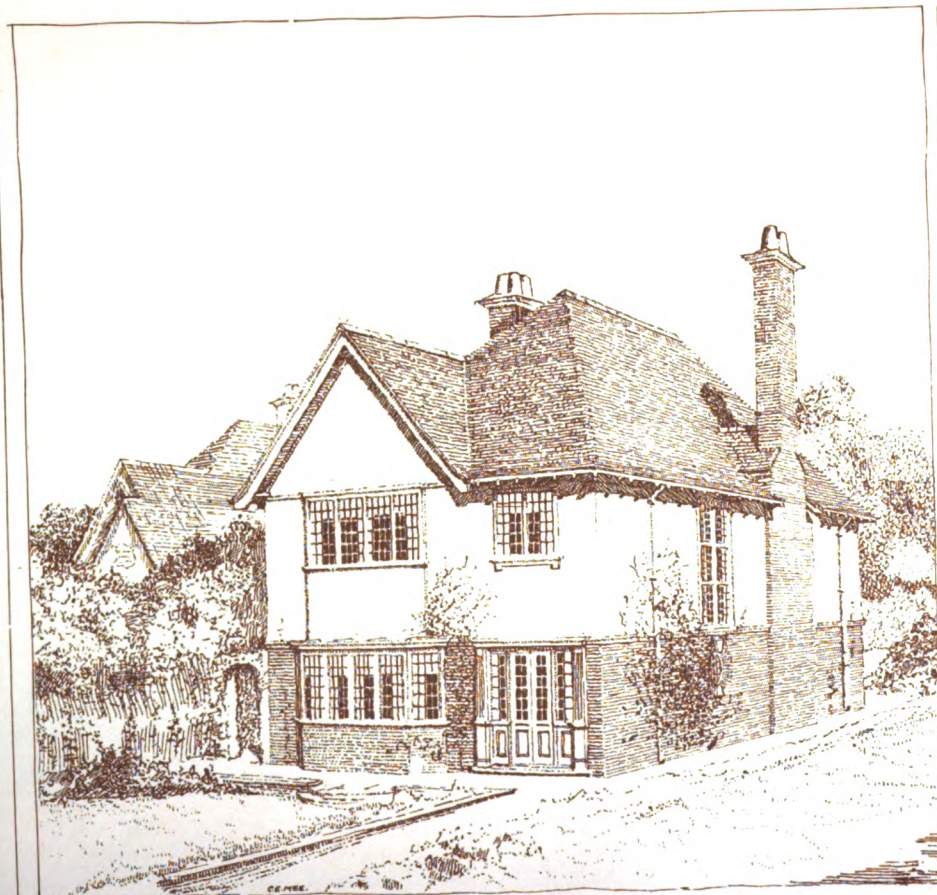




THE CROFT. LOWESTOFT



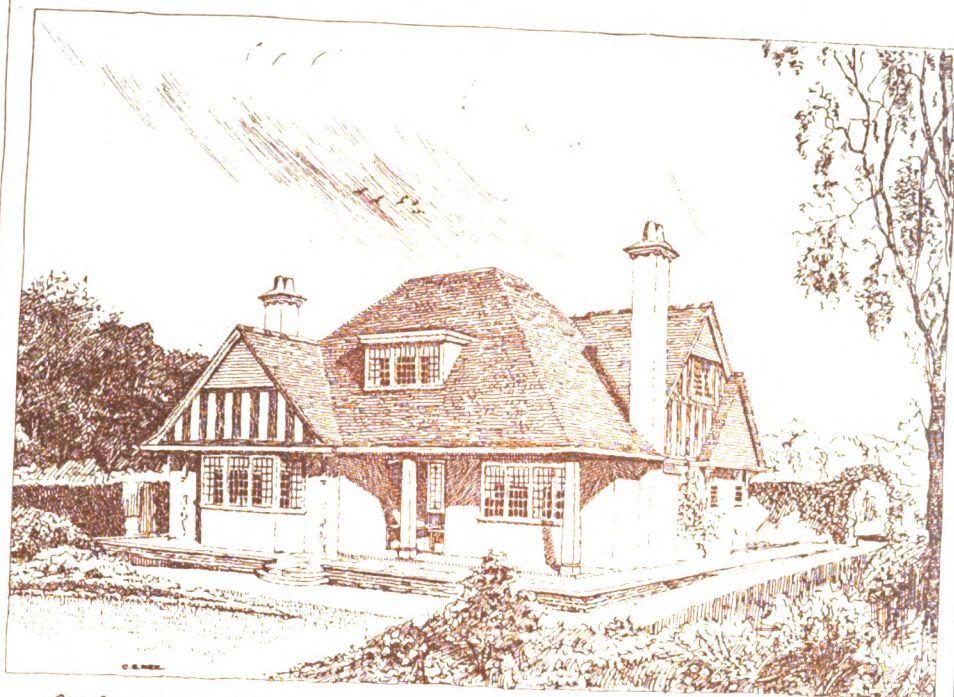
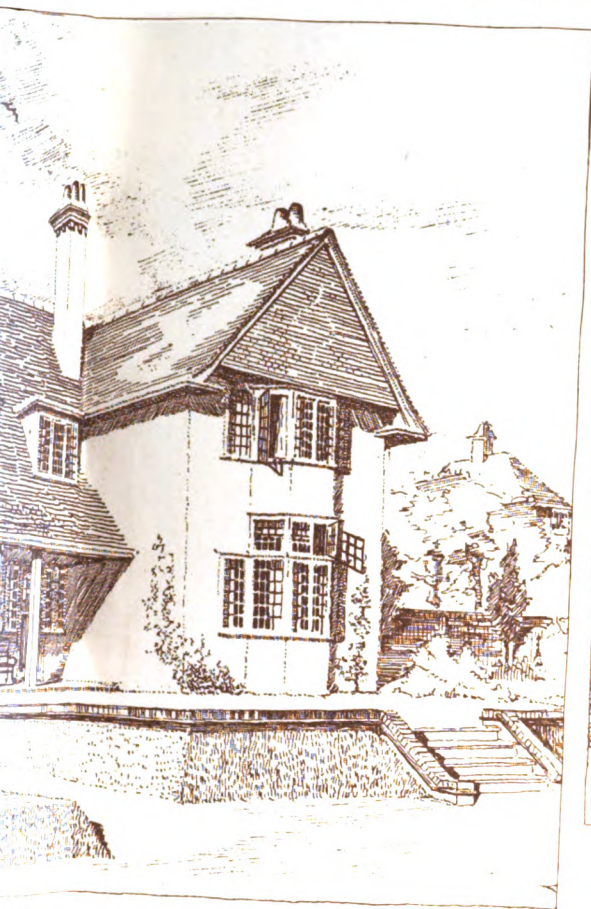
CHURCH HOUSE for the SPORTS CLUB LTD DOREEN COURT.



HOUSE. ST. FRONKS ESTATE. DOREEN COURT.



MANOR CLOSE. LOWESTOFT. N.



THE BUNGALOW, IPSWICH.



THE GABLES, CULTON BROAD

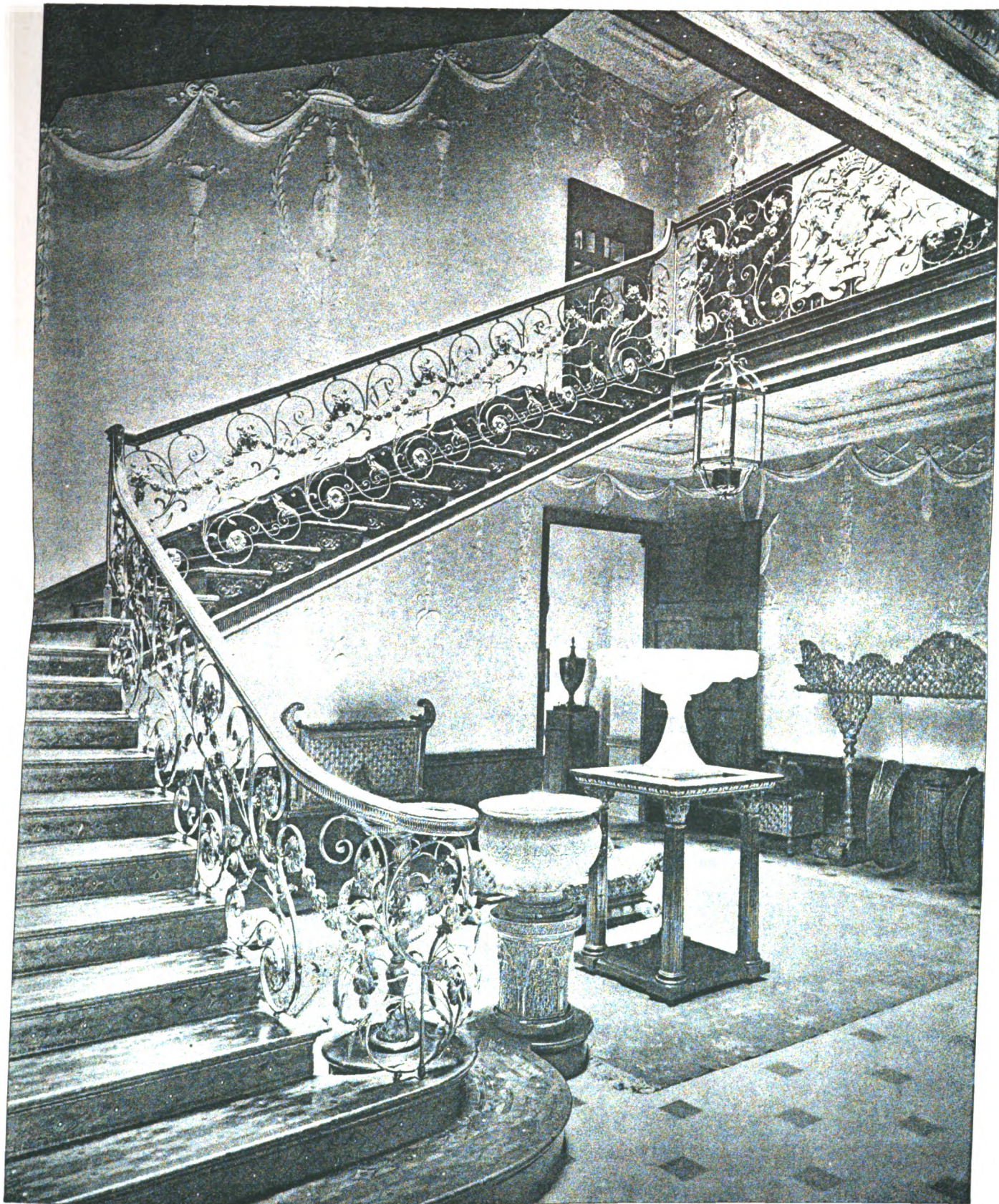




INK-PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

CLAYDON HOUSE. CLAYDON, BUCKS.: THE PINK ROOM.





"INK-PHOTO" SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

CLAYDON HOUSE, CLAYDON, BUCKS.: THE INLAID STAIRCASE AND ADAM DECORATIONS.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

WE have received only a few drawings of bay and oriel windows, which are features which ought to be well and carefully studied, as there is scarcely a small modern house in which one or the other is not introduced. The old examples have a charm whose secret can only be discovered, whose feeling can only be imbibed by the careful study imposed by measurement.

"Alpha" has measured a semi-octagonal two-storeyed stone bay from Welton Hall, Northumberland, an example of good proportion and simple, unaffected treatment of entirely satisfactory character. The drawing is well done and workmanlike.

"Owain" gives us a carefully measured and decently

INTERIOR DECORATION.—III.

By ALBERT E. BULLOCK, A.R.I.B.A.

GREAT BRITAIN.—III.

HOUSE OF HANOVER—THE GEORGIAN ERA.

(Concluded from last week.)

HAREWOOD HOUSE, Yorkshire, was in course of erection in 1760 from designs of John Carr of York; Holkham was practically completed the following year, when Kedleston, Derbyshire, occupied the attention of Robert Adam, who commenced Lansdowne House some four years later.

Meanwhile Sir William Chambers was actively employed at Kew Gardens erecting pagodas and temples to adorn the grounds. Chambers's earlier works include Pembroke House, Whitehall Gardens, which is now threatened with demolition. The accompanying views show a chimney-



KENT'S CHIMNEYPiece, PEMBROKE HOUSE.

drawn study of a circular bay window from Kirby Hall, with its interesting Gothic lines and Renaissance detail.

"Avec beaucoup de peur" has selected an earlier example in the richly wrought bay window in the Deanery, Wells. The drawing, though sufficiently workmanlike, is a little confused by economy of paper.

"Chelt" sends the only example of an oriel, and that in brick, from the Rye House, Hoddesdon, Hertfordshire, which is both interesting and charming, and is well drawn by our contributor.

We award prizes of half a guinea each to "Alpha," "Owain," "Avec beaucoup de peur" and "Chelt."

piece by Kent, who formerly executed some work here, in a room now occupied by the President of the Board of Trade. The ante-room on the first floor has an elegant decorative theme for so small a room, which is to be seen in the second view of the staircase.

Carrington House, which formerly stood on the site now occupied by the new War Office building, was an exceedingly tastefully designed house, especially as regards the interior. Chambers' design for the ball-room exists in the collection of his drawings at the Soane Museum. The room has an alcove at the end, and the walls are panelled with large and small panels, the latter having a plaster or carton pierre treatment in his favourite man-

ner. The difference between the work of Chambers and Adam is very distinct, although contemporaneous, the ornament of the former's examples being of a more varied and studied character, with just sufficient relief to make it bolder, more sympathetic to the theme, and thereby vastly more interesting. This is particularly noticeable in the detail of the ante-room at Pembroke House, the design of which shows obvious study of French principles on the wall side, while the window side has an English traditional basis in the design of the long sculptured panels and the ornament to the mullions.

Robert and James Adam were the most important decorators of this period. The life of the family has been ably traced by Mr. John Swarbrick, A.R.I.B.A., in his prize

to obtain the rich effect which his productions certainly give. His greatest faults lie in the repetition of meretricious ornament, absence of colour, and a leaning towards too delicate an execution of his designs. When he secured the assistance of Antonio Zucchi and Angelica Kauffmann, the effect of his interiors was very much enhanced by the contrast of the paintings with the plaster decorations. This was just what his style chiefly lacked, and the combination proved eminently successful. The Brothers Adam published a series of their designs, but the majority of their original sketches were made into 55 volumes, which were bought by Sir John Soane, and are now in the Museum of that name in Lincoln's Inn Fields.

The scheme of decoration adopted in the drawing-room



ANTEROOM, PEMBROKE HOUSE.

essay of the Architectural Association for 1903, published in their "Journal" for that year. The "Adam" vogue was of almost unlimited extent to the exclusion of many of their compeers; they readily fell in with the demands of their day, designing in various styles: Moorish, Gothic, Chinese, and more especially their own peculiar invention associated with their name, which has been termed the "English Empire" style. Robert Adam, as the principal inventor of the style, infused his brothers and assistants with an enthusiasm for producing like work, the character of which exhibits a love of detail of a refined nature based upon his foreign studies and adapted to the modern requirements. He avoided the heavy cornices and bold projection of the work of his predecessors, placing his faith on the slight projections of bas-relief, using pilasters preferably to columns where possible, and relying on his ornament

at Stoke Edith has already been referred to. The walls were designed with panels grouped together at intervals, the central one in each bay being decorated with an oval containing a Greek tripod with griffins' heads. The border of the ceiling is ornamented with a design of laurel leaves in geometrical scrolls, and other ornaments are adapted to the frieze and panels. The general effect is somewhat restless and disconnected. There are all the attributes of good design, an harmonious scheme with rectangular treatment, but it is spoiled by puerile and meaningless detail. The description of this room fully typifies other examples, although Adam frequently exhibited much originality and variety in the planning of additions to the larger residences upon which he was engaged. This work was executed about 1771, two years after which date the brothers commenced the publication of their "Works on Architecture," which came out

periodically, and one of their draughtsmen, G. Richardson, brought out a "Book of Ceilings" in 1776, based on the same principles. A year later M. A. Pergolesi published his "Designs," containing friezes, cornices, &c., similar to P. Columbani's "Book of Ornament," which preceded it.

Robert Adam was engaged on his decorations to Newby Hall for Mr. William Weddell in 1772, when he built the additional wings, including the triple sculpture gallery, which, being based on a Roman model with little decoration except to the arches and alcoves, is highly successful for the purpose for which it is intended. In the drawing-room are exceedingly fine Gobelins tapestries of eighteenth-century workmanship, making a good composition, although the ceiling treatment is cold and hard in design, redeemed by some tasteful paintings by Antonio Zucchi. The library walls are decorated with arabesque panels similar to those at Stoke

supervision in connection with these decorations, although the *hand* is obvious.

The ceiling of the drawing-room at Broome Park is in the Adam manner, but the eighteenth-century alterations were carried out under the direction of James Wyatt in 1778, after he had transformed the Pantheon, Oxford Street, and prior to his "fall," when he acquired mediæval predilections. Sir Henry Oxenden confined Wyatt chiefly to the entrance hall and drawing-room, the former being rather bald in its absence of decoration. The ceiling is plain; Tuscan columns support beams flanking the central area, the windows being altered to sashes. There is an apology for a cornice, the most decorative feature being the light stone paving, which is worked in geometrical patterns with darker bands.

Claydon House, Buckinghamshire, parts of which are illustrated by the accompanying photographs, has already



STAIRCASE, PEMBROKE HOUSE.

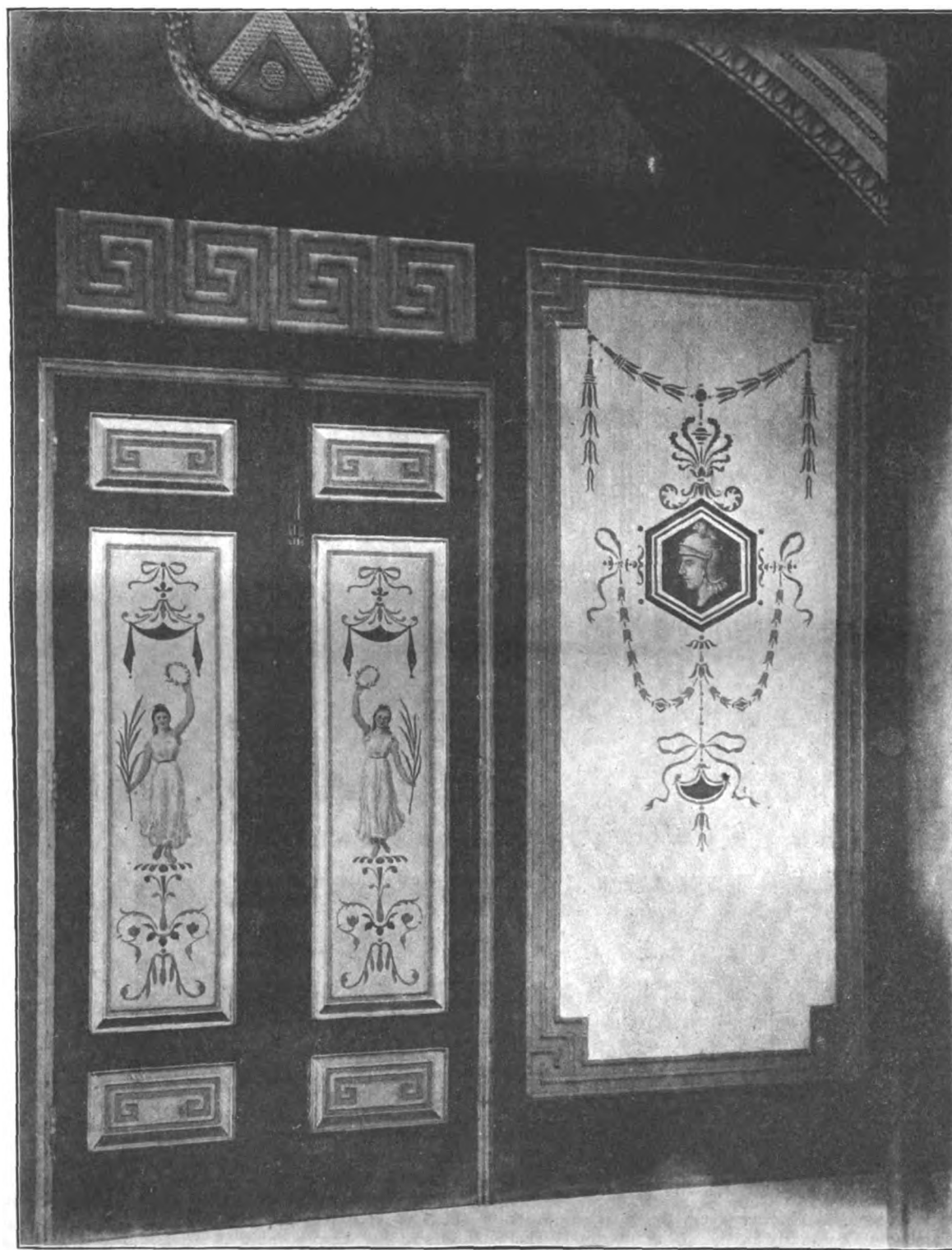
Edith; the chimneypiece is a good design, which, with the painted panel above it, forms an interesting feature in the room.

In their designs for chimneypieces the Brothers Adam excelled, and more especially in the metal interiors. There are numerous examples of their work, notably at Barnsley Park and Kirklees Park in Yorkshire, which latter was being decorated for Sir George Armytage about the time Robert Adam was engaged on his extensive work at Harewood House, to which Sir Charles Barry made additions in the following century. Mr. Tipping has unearthed the names of two people connected with the decorations at Kirklees Park—namely, that of "Mr. Lindley" for plans of a new room, for which he received six guineas in 1777, and "Mr. Bertram," who obtained the sum of £37 6s. "for carving in the Great room," there being no definite record of Adam

been alluded to in a previous article. It remains to describe the work of Chippendale and Adam. The house was made a subject of importance in *Country Life* for March 1912 by Mr. Lawrence Weaver, who there traces the lineal descendants of the Verney family. The chief decorations are of eighteenth-century origin, presenting as a whole an overwhelming sumptuousness having some historical interest in indicating the florid tastes of the time. Here may be seen actual examples of the influence of Edwards and Darly's book on "Chinese Designs," published in 1754—inlaid doors and an elaborate staircase, with inlaid treads and risers ornamented with mother-of-pearl; doors of French influence; a modernised Gothic decoration said to be the early work of Adam. Mr. Weaver's research has, however, brought to light the name of an Italian plasterer, one Patroli, who worked there for some considerable time, perhaps under

Adam's direction. The quieter work of Adam is to be seen on the walls of the staircase, of which the handrailing is a very fine specimen of wrought-iron work. Of the fireplaces that in the library is the most tasteful, while the north hall, Gothic room and saloon contain others with more elaborate carving than our modern ideas of refinement allow. The ceilings vary in a similar way, and have as much excess of freedom in their design and execution. There are fine features, taken individually, in many of the rooms—oak door frames of the library and the pedimented doorways of the saloon

two talented artists. Maria Anna Angelica Kauffmann was born in 1741 at Coire, Grisons. Her family migrated to various towns, as Como, Milan, Schwarzenberg, and subsequently to Rome in 1763, where she made the acquaintance of Winckelmann. She studied the paintings of Titian, Tintoretto and Veronese at Venice, and came to England in 1766 with Lady Wentworth, living with her father in Golden Square, where she executed many portraits of the nobility. Her decorations include the Flower-room at Frogmore for the Queen; the ceiling of the Council Chamber at Burlington



AT SHEEN HOUSE, RICHMOND.

being cases in point—but one hesitates to estimate the value from an art standpoint of the majority of the decorations which glare out from every corner. The whole house suggests that the owner was of an arbitrary nature, in possession of little taste, which resulted in the employment of artists of entirely opposed calibre.

The marriage of Angelica Kauffmann to Antonio Zucchi in 1781 calls for some remark as to the part played by these

House; decorations for Lord Londonderry in Ireland, and many like works, apart from the extensive amount of painting she did for the Brothers Adam. Her personality must have been of a very charming nature to have received the attentions of Garrick, Goldsmith, Fuseli, Nathaniel Dance and Sir Joshua Reynolds. After her marriage she went with her husband to Rome, where she died in 1807.

Angelica Kauffmann favoured the French "red-chalk

manner of engraving" introduced by Francesco Bartolozzi (1727-1815). He was a great friend of Cipriani's, with whom he lodged in Warwick Street, Golden Square, having come to England in 1764 at the request of Mr. Dalton, librarian to George III. J. B. Cipriani produced his "Book of Ornament" in 1786; he was an excellent draughtsman, executing many designs for the Brothers Adam. In 1782 Joseph Rose, junr., published a book containing "330 Designs for Friezes, &c.," from the designs of the Brothers Adam, Wyatt, and Stuart, which gives a very good idea of the class of work carried out at this time.

An early instance of stencil work and decorative painting exists at Sheen House, Richmond, executed about 1785, illustrated by the accompanying photograph. Very little stencil work was done until the advent of Alfred Stevens towards the middle of the nineteenth century, examples of whose work exists in the collection at the Victoria and Albert Museum. In this museum may be seen some very fine inlaid chimneypieces made by Peter Bossi, the sculptor, from Dublin, who practised there during the last quarter of the eighteenth century.

The interior of Dover House, Whitehall, 1786, presents

work to realise its suitability to the character of the decorations of the later Georgian era, and even with work of the nature of that adopted by Chambers with which it is eminently harmonious.

Upon the work of Sir John Soane we do not need to dwell at any length, since a review by the writer appeared in this journal in October 1911. The influence of his work, which has hitherto been somewhat overlooked, is now being more fully appreciated, as no doubt his valuable library will be during the present era of Greek revival. The danger of this movement lies chiefly in the possibility of losing the spirit of the work, which originally depended for effect as much upon colour as form. If the colour be omitted the form becomes merely a hard repetition of characteristic detail, and without freedom of execution combined with originality of design this movement is doomed to a premature burial, a revival of the advanced Empire style of Thomas Hope being the incipient resultant, and one cannot do better than quote a voice from the past upon this very point in the words of C. J. Richardson: "The English school, as left to us by Wren and his pupils, gave us a style admirably adapted to our wants; and if, instead of correcting the heavy contentious ornament belonging to it, through the medium of the puerile



CAPITAL IN WALNUT WOOD.—DESIGNED BY ALFRED STEVENS, EXECUTED BY DAYMOND & SONS.

an entirely different class of decoration from the contemporary work. Henry Holland was an architect who based his work upon sound principles of construction. He was born in 1746, and had an extensive practice, executing Carlton House, Pall Mall, for George, Prince of Wales (afterwards George IV.), which was pulled down in 1827. His Dover House work constituted additions to Paine's building. In a similar way he made alterations to Wyatt's work at the Pantheon, Oxford Street, the portico of which is a subsequent addition by Smirke. Portions of Althorpe Hall, Northamptonshire, are from designs of Holland, who imparted to Sir John Soane some of his early education.

The age of Heppelwhite, Shearer and Sheraton was ushered in by the publication of several books on cabinet work, upholstery, &c., wherein they do not hesitate to point out the sins of omission of their predecessors in the trade.

With all the boasted refinements and grandeur they professed to introduce, the age of Chippendale has yet to repeat its history, and will be recognised ere long as the period when the art of the joiner was most successful and promised the best æsthetic results. Delicacy and refinement is not necessarily the most practical form of treating an object which has to suffer considerable wear and tear. One has only to examine a few examples of the best Chippendale

pencils of the Adams, we had applied the pure principles of Grecian art and Grecian taste (the true source of all correctness and beauty), the style of that period gave promise of equalling the best productions of foreign schools, and of being surpassed by none."

Cockerell is, perhaps, the only English architect who interpreted the Greek spirit within the meaning of the above expression, but since a description of his work would necessitate reviewing the work of the nineteenth century we must leave this for a later opportunity, when we have space to deal adequately with the subject of the work of Sir Charles Barry, Goldicutt, and Alfred Stevens. The period was somewhat barren and devoid of a high standard of taste in the intervening years, and the shining lights of genius very few. Stevens started a new school of thought and design, having, unfortunately, too few followers to carry on the good work he began.

In conclusion, I have to express my indebtedness to Mr. Lawrence Turner for the loan of several useful photographs illustrating some Jacobean and Georgian examples; to Mr. Walter Spiers for the photographs of Chiswick House and Pembroke House; to Mr. Lawrence Weaver for information about Claydon House, and to Mr. Goodison for permitting me to see photographs in his possession of Carrington House.

FRENCH RENAISSANCE ARCHITECTURE.—IV.

IS the third of the ten public lectures dealing with French Renaissance Architecture, now being delivered on Thursday evenings at University College, Gower Street, W.C., Mr. W. H. Ward, M.A., A.R.I.B.A., had dealt particularly with Church Architecture under Francis I. and the beginnings of the Advanced Renaissance. He showed how the influence of the early Renaissance of Northern Italy introduced by the colony of Amboise or Loire school was beginning to wane before that of the Roman Renaissance, propagated on the one hand by the new colony of artists engaged by the King to embellish Fontainebleau, and on the other by a number of young Frenchmen, some of whom had learnt the new manner in the course of their travels in Italy, and especially in Rome.

In his fourth lecture Mr. Ward dealt with "The Louvre and Advanced Renaissance, or Style of Henry II." The latter style was, as previously pointed out, well established before the death of Henry's father. One of the last acts of Francis I. was to set about rebuilding, at least in part, the feudal Louvre. He selected in 1546 as architect the Frenchman Pierre Lescot, whose style was of the advanced Renaissance; and for the first time an artist was accorded complete administrative control of building operations. In all the four known works of this architect Jean Goujon worked as a sculptor. At the Louvre, Pierre Lescot was genuinely the architect and responsible for the general design, but he acted in consultation with Goujon, who doubtless exercised considerable influence on him. Mr. Ward would not accept the view that Goujon was the real architect of the Louvre, and Lescot merely a figurehead.

When Henry II. came to the throne the most celebrated example of the Advanced Renaissance in France had thus already been begun. One of the most important departures from tradition at the Louvre was the fact that the design was conceived as a whole from the first, and set out not only with symmetry and regularity, but in such a manner that it would produce a broad and dignified effect by the grouping and proportion of its masses and storeys. The decoration was bolder and confined to carefully selected portions. The most striking characteristic lies in the treatment of the Orders, which are detailed and proportioned, applied and combined, in accordance with the rules deduced by the Italians from ancient monuments and the writings of Vitruvius. All the mouldings and enrichments are cut with a crispness, sharpness, and delicacy which is hardly found at any other period. A few less important buildings which exhibit similar characteristics were mentioned by Mr. Ward, such as the Hôtel Cabu at Orleans, the Château of Bournazel, and Hôtel d'Assezat at Toulouse.

In the diminishing church architecture the fashion principally showed itself in individual features as the door of St. Nicholas at Troyes (c. 1555) and the south-west tower at Gisors.

In the Louvre a rare distinction and an almost feminine grace and delicacy are amongst the most striking characteristics. But simultaneously with them were rising other buildings, principally works of the School of Fontainebleau, in which there is less delicacy but greater boldness. An example of these is the east wing of the Fountain Court of Fontainebleau, possibly a work of Serlio, but more probably of Primaticcio. It is remarkable for its symmetrical massing, bold rustication, and majestically conceived flights of steps. Another example is the Château of Monceaux-en-Brie, which, according to Mr. Ward, was probably begun in 1547 for Catherine de Medici from the plans of Primaticcio. Here was introduced for the first time in France a giant order.

Soon liberties began to be taken with classical design, and the purer traditions of Bramante and Raphael were forsaken for the freer practice of Michel Angelo. Both Il Rosso and Primaticcio at Fontainebleau gave free reign to their fancy in decoration and employed the most fantastic devices, particularly the free use of the human figure, for architectural functions, together with a lavish use of scrolls, wreaths and swags, and especially of the cartouche. Among the contemporary French architects there was the same discontent with the simpler classic forms used in their logical application. Among these was Jacques Androuet du Cerceau, whose published designs show the gradual development between 1533 and 1584. Somewhat similar motives inspired Philibert de l'Orme and Jean Bullant. The first-named on the death of Francis I. was appointed architect and inspector-in-chief of all the royal buildings, with the exception of the Louvre. One of the most important of his innumerable works was the rebuilding of the Château of Anet (1548-

1554); it suffers considerably from over-elaboration and fuss. On the death of Henry II. in 1559 de l'Orme was dismissed in favour of Primaticcio, the Queen Mother's favourite. Within three years, however, Catherine employed de l'Orme to prepare a scheme for her new Palace of the Tuileries. Here he exhibits his usual characteristics, but as regards the plan there is an advance on Anet. On his death in 1570 the palace was continued by Bullant, a man whose work is very various and difficult to estimate.

In the thirty troublous years after Henry II. met his death in a tournament in 1559 France fell into a state of ever-increasing anarchy and demoralisation, and building became more difficult and new edifices rarer. Those erected often show a love for bizarre and contorted forms and for overloaded ornament. Rustication also begins to be lavishly used, and the tendency to enhanced scale increases. Prominent in this period were the remarkable architectural family of Androuet du Cerceau.

POST-IMPRESSIONISTS AT THE GRAFTON GALLERIES.

"AND they said one to another, It is manna, for they wist not what it was." A fitting text to any review of this, the second of these Exhibitions (apt word!). The first one was held two years ago, and is doubtless remembered by all those who attended it. Indeed, who could forget such work as is presented here to the eyes of an unadmiring public? For let it be ever understood that the general public (always more or less sane) has but laughter (at the worst) and scorn (at the best) for such a medley as the Grafton Galleries are now displaying, though mercifully closing their doors ere a New Year dawns.

In the course of some unconsciously-apologetic praises by the several preface-writers of the English, French, and Russian groups, the English apologetic laudator, Mr. Clive Bell, remarks that "New wine abounded, and the old bottles were found wanting." Ay, truly! and the sooner this new wine is corked up in new bottles and stowed away in old or new cellars the better. And what in the name of Art does Mr. Bell mean by this? "It is possible to contemplate emotionally a coal-scuttle as the friend of man. We can consider it in relation to the toes of the family circle and the paws of the watch-dog." Further on he merits and receives our grateful assent. "Looking at these pictures, every visitor will be struck by the fact that they are neither pieces of handsome furniture, nor pretty knick-knacks, nor tasteful souvenirs," and he adds, "They are intended neither to please, to flatter, nor to shock"; but, Heaven help us! even if not so intended they certainly *do* shock us. Mr. Roger Fry in his Preface remarks that these artists "do not seek to imitate form, but to create form; not to imitate life, but to find an equivalent for life. . . . They aim not at illusion, but at reality"—and they signally fail in their aspirations.

But enough of the preface-writers; let us prepare to deal with some of the works presented to our sight. It would seem to be a radical idea of all post-impressionists to disregard form, drawing, proportion, harmonious colour, values and poetic conception amongst other recognised qualities of Art, whose requirements such men as Murillo, Rubens, Reynolds, and an innumerable host studied to satisfy. We know that beauty is but of the surface, and not always then apparent; but, except in historical works or specific portraits, surely an interesting face and a pleasing figure are desiderata. However, the post-impressionists deny this in practice, for never (or hardly ever) one or the other is portrayed. Leighton glorified (as he was justified in doing) the grace, the beauty of the nude; alas! the post-impressionists give us the nude denuded of all grace, all beauty, all life! Regard, par exemple, M. Henri Matisse's "La pose du nu," where, however, we gratefully recognise a good scheme of light and shade. Let us dispose of this practitioner's work at once. "Les capucins" recalls to our memory the title of a quarter-century old song, "You should see me dance the polka" (only we would prefer to close our eyes on the vision), just as "La coiffeuse" suggests the song "Two lovely black eyes"; and with all diffidence we ask—"Would not the lady have done better to have donned, if only a chemise or even a chemisette, before subjecting herself to the labours of the hairdresser? If we desire to regard M. Matisse in his glory, let us observe (but only for a second) "Conversation." Here is a large, a monstrously large, canvas with two profile figures—man in pyjamas, with hand in pocket, facing seated woman, whose facial profile has almost disappeared; there is also a balcony and a garden—such a balcony and

such a garden! "La luxé" shows three women (of course, nude) post-impressionally posed and drawn. "Jeune Marin" has emerald knickers, and as there was some of the colour left on the palette M. "Wemmick" Matisse said to himself: "Ma foi! Here is some emerald green over; let's use it for the eyes, the eye-brows, and—yes! there is just enough left for the upper lip." He exhibits one passable pen-and-ink sketch, and in his "Les danseuses," ghastly as it is, we recognise the search after flow of line and the desire to express legitimate emotion. We must finally draw attention to his plaster figure of "L'Araignée" for its sinuosity, which does not suggest a spider, and for its unreality, which does not suggest a woman. Au revoir, cher M. Matisse!

In this Exhibition we realise how much the jig-saw craze has influenced certain post-impressionists. In some cases the artists (we shiver when so designating them) have more or less successfully solved the puzzle, whilst elsewhere they have tired after a time, and in some instances have, ab initio, fitted the sections in anyhow nohow, so long as a rectangular block was obtained. Signor Pablo Picasso and Mr. Wyndham Lewis are the two chief sinners in this line; the former in his "Tête de femme" (No. 64), "Tête d'homme" (which is mad), "Buffalo Bill" (which is madder), and "La femme au pot de moutarde." In comparison, his portrait of "Mademoiselle L. B." is presentable. And what does Mr. Lewis give us? There is his "Mother and Child," which is jig-saw rampagous. Shut the eyes—quick!—And keep them shut! In "Creation" more appropriately are the sections coming together deliberately, but they have not yet assumed their proper positions altogether (and that is wording it mildly). Mr. Lewis also shows some drawings for a masque of "Timon of Athens"; in No. 201 the effect is as though he muttered to himself, "There's not one piece in its right place; what shall I do?"

M. André L'Hôte's "Tête de Nègre" is very passable, if we reflect that "In the land of the blind the one-eyed are kings." M. Henri Rousseau's "Scène de Forêt" shows the reddest, the hardest, the most unattractive sun ever presented to the vision, and the vegetation is as hard as a bar of cast iron, and quite as unbeautiful. M. Marchand's "Vue de Ville" is a design in Richter's anchor building blocks for children. Why not? Is not a large proportion of the exhibits apparently the daubing of juveniles? M. Chabaud's "Chemin dans la Montagne" presents us with a couple of lines of seemingly Bourse news-tape along the road, with never a soul in sight to read off the latest prices of stocks and shares: "Le troupeau sort après la pluie" is awful; and carefully note that the various curious objects shown are trees, not branched candlesticks.

In Mynheer van Dongen's portrait of his wife we observe the first clever work, our principal objection being to the green shades on the flesh; but the work is brilliantly clever, the pose striking, the face attractive and well modelled, and though veiled behind dark lashes, yet the eyes are suggestively bright behind the veil. The artist has been less successful in other works. Bearing in mind "the land of the blind," M. Flandrin's "Canal à Venise" and "Basilique Romaine" are passable. Mr. Henry Lamb's portrait of Mr. Lytton Strachey is probably a good likeness, though not a work of art. Mr. Gore's "Letchworth Station" has most exaggerated figures on the platform. Mlle. Vera Joukoff's "Portrait of an Old Woman" is as hard and uncompromising as nails; and M. Eugène Zak's "Le Berger" shows a shepherd oblivious of his flock (of three sheep) in the far distance; he would seem to have hurt his hand, and we are shown the enormous drops of blood that are floating on the surface of the water.

But is it not all vanity and vexation of spirit? No! Not the latter, apparently, for laughter is perforce drawn forth, and at times we missed the presence of a companion who would laugh with us. More often we missed her gentle influence to soften the maledictions with which we were fain to maledict the desecrated altars of painting and sculpture.

ARCHITECT'S RIGHT TO ORDER GOODS.

As important point respecting the right of an architect to pledge the credit of a builder was argued in the Court of Appeal before Lords Justices Vaughan Williams, Buckley and Kennedy on Monday, November 4. There were cross appeals in the action of Ramsden & Carr, metal workers, Seymour Place, South Kensington, and Messrs. J. Chessum & Sons, builders, South Place, Finsbury, the question at issue being goods supplied in connection with the erection of a cinematograph theatre in 1910 at 225 Oxford Street.

The place was built by the defendants for a company which, counsel said, had since gone into liquidation. The plaintiffs supplied a quantity of hammered silver and brass door plates, artistic door handles, and other goods, which were ordered by the architect (Mr. M. S. Ward), and for which Ramsden & Carr contended the builders were responsible. The plaintiffs claimed £142 13s alternatively in respect of goods sold and delivered as money had and received by the defendants for the use of the plaintiffs, or as money held in trust for them. Chessum & Sons denied liability and repudiated the authority of the architect to pledge their credit. Mr. Justice Hamilton, in the Court below, held that the plaintiffs had failed to show that any money was received by the defendants from the company that should be allocated to the account for the goods, but that Ramsden & Carr succeeded in the issue as to goods sold and delivered. On that issue the learned Judge entered judgment for the plaintiffs with costs, the defendants getting costs on the issues on which the plaintiffs had not succeeded.

Mr. Ratcliffe, K.C., for Chessum & Sons, said the question was whether his clients or the building owners should pay.

In the course of the arguments Lord Justice Vaughan Williams said: It is plain there was a difficult question to be answered, and yet the plaintiffs asked for summary judgment without a trial. They say they believe there is no defence to the action. I can only say that is most improper, and if I were the Judge in Chambers and the summons came before me, I should not only dismiss the summons, but I should order the plaintiffs to pay the costs in any event, and I should see if I could not make the solicitors pay too.

Mr. Eames, for the respondents, said his clients knew nothing of the facts at that time as disclosed in Court now.

Mr. Ratcliffe said the architect ordered this metal work, or a great deal of it, purporting to act on behalf of the contracting builder. But the architect had no authority to do that. They were extras, and the contractor was not responsible for them. Under no circumstances could his clients be held responsible. The learned Judge below said "if Mr. Ward is not your agent, you have had these things, they have been fitted in your house, and that is an implied contract." The contractor was not bound to supply these goods, and the architect had no authority to order them. Certainly they were affixed by one of his clients' workmen, but that was by order of the architect.

Lord Justice Williams: Is Ward a party to the proceedings?

Mr. Eames, for Messrs. Ramsden & Carr, replied that he was not. He had not been served.

Lord Justice Buckley: Did Ward give evidence?

Mr. Eames: Yes.

Replying to the Court, Mr. Ratcliffe said the cost of the building was about £26,000. What the architect should have done was to tell the contractor what things were needed and ask him to obtain them.

Mr. Eames said the defendants had had these goods and made use of them. They took the benefit of them as though they were supplied under the contract. It was inferred the goods would be paid for by the appellants. His friend was wrong in suggesting that the architect had done something wrong. In the Court below the counsel for the defendants (Mr. Scott) formally admitted that they knew of the goods, that they were on the premises, that they were ordered by contract, and it was also admitted that they were goods treated as coming under the contract. The defendants also admitted that Ward had done nothing wrong, and the only ground on which the defendants objected to pay was that they had not been paid by the building owner.

When the case was resumed on Tuesday, November 5, Mr. Eames contended that there was an implied promise by the defendants to pay for the goods supplied, because they were accepted and used by them. There was authority under the contract for Mr. Ward to give the order. There was also good ground of action by the plaintiffs, because the defendants had received the money from the building owners.

Lord Justice Kennedy: I did not understand that the money had been received.

Mr. Eames said they received bills, which were treated as cash. If, said counsel, one took or accepted a negotiable instrument and the parties treated it as cash, that would render the giver liable for the amount. It could be treated as money had and received, although as a negotiable instrument it had never been met. He desired to correct a statement that had been made to the effect that at the time Mr. Ward gave the orders the Cinematograph Company was in financial difficulties. That statement must have been made

under a misapprehension, because so far as the first lot of goods was concerned most of the orders were given as early as April 1910, before either the architect or the builders had any idea or fear that financial difficulties would arise. The plaintiffs were not a business firm in the strict sense. They knew Mr. Ward, and had accepted his orders before on behalf of builders. The first invoice was certainly made out to Mr. Ward.

Lord Justice Williams: Is not that *prima facie* evidence that Mr. Ward is liable?

Mr. Eames said it was merely in the nature of a memorandum that the goods were supplied to the order of Mr. Ward, but it meant in reality that he was purchasing them on behalf of the defendants. He contended that the certificate given by Mr. Ward for £1,700 included the amount due to the plaintiffs. He submitted that Mr. Ward had authority to act as the agent of the defendants, and that they ratified and adopted his act.

Lord Justice Buckley: Will you argue that in the cross-appeal?

Mr. Eames said he had no desire to go over all the ground again, and he would prefer that the arguments he had used should be taken as what he would say in the cross-appeal. He would further submit that the defendants had received the money to which the plaintiffs were entitled.

On Wednesday, the 6th inst., the Court of Appeal delivered judgment.

Lord Justice Williams said there was no evidence that the architect had power to order goods either for the builders or the building owners. Neither was it proved that the contractors knew that the goods had been supplied, and that they were to be held liable for them. Agency had not been proved, nor had it been proved that any money had been paid by the building owners to the contractor for the benefit of the plaintiffs. The appeal of the defendants, therefore, would be allowed, and the cross appeal dismissed.

Lord Justice Buckley concurred.

Lord Justice Kennedy dissented. The defendants, said his Lordship, had accepted the goods and used them, and they were therefore liable. It was quite optional on their part. Had they liked they could have rejected the goods.

The Court, by a majority, allowed the defendants' appeal and dismissed the cross appeal.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Building Trade Prosperity.

SIR.—I was pleased to read your remarks in Notes and Comments quoting your Irish contemporary who stated that the building trade in Ireland is flourishing, particularly so in Dublin. Despite every possible difficulty the building trade seems to be improving also in England—to be able to return to the good old days when our manufacturing firms were complaining that they could not cope with their orders; when our leading builders hardly knew which way to turn, and on calling on leading architects the report was, "Quite unable to see you, even by appointment." What a desirable position! Is it coming again? Will England ever see it, and, if so, how long?

Apologising for trespassing on your space.—I am, &c.,
AN AGENT.

Fire! Fire!! Fire!!!

SIR,—The fire at the premises of Messrs. Barker, of Kensington, gives proof of the value of a fireproof constructed building with fireproof doors. But for such, a terrible fire would have resulted, with much greater loss of life. It is sad to think of the loss which has attended the fire, and it does not do to contemplate what might have been but for the efficient way in which walls and doors withstood the enormous heat. Might I be permitted through your columns to make a suggestion, which I have seen carried out with some effect: in the roof why not a large storage tank for rain water which could be used as a huge sprinkler in case of fire?—Your obedient servant,

A. N. S.

SIR,—When I take stock of the many big fires that our metropolis has witnessed during a period of but a few months, I am necessarily led to wonder where the main responsibility lies, not so much as regards the outbreak, but more with respect to the extent of the ravages. In these days of fireproof (!) materials, construction and details, how is it that, despite the several claims made for the superiority of one patent over all its predecessors and possible successors, the damage is so great and the death-roll so high? It seems to me that initially there should be a system of localising in construction, much in the same way that boats are now built with watertight compartments; and though we know that, even so, disasters may occur (as witness the *Titanic*), yet the chances of serious damage are minimised. If necessary, the L.C.C. should require (by legislation, to be obtained) smaller cubical dimensions to be enclosed by fire-resisting floors, walls and doors. I would go further and suggest that every lift-enclosure should be provided at each floor-level with a close-fitting, sliding, horizontal fire-resisting shutter, to be run into position and so maintained during all the hours when the premises are closed. We can never, I believe, eradicate chance dangers, but we should do everything possible to minimise them.—Faithfully yours,

PERCY L. MARKS.

Provincial Members and the Quantity Surveyors' Association

SIR.—It is about ten years since I wrote to the building papers suggesting the formation of an association of quantity surveyors. My proposal was energetically taken up by Mr. F. B. Hollis, of London, and the result was a meeting in London in March 1903, at which I took the chair and the present Q.S.A. was formed.

We then estimated that there would be double the number of London over provincial members, and by virtue of incessant attendance and determination to see my provincial colleagues properly represented, I succeeded in enforcing a by-law that the London members of the Council should not exceed double the number of provincial members. But provincial members were necessarily in the minority, and I could not get a fixed rule made that of the President and two Vice-Presidents one should be a provincial surveyor, although the principle was agreed to, and promised verbally, and has ever since been honourably adhered to.

Time has shown serious defects in our calculations. There are now 107 London members and 84 provincial ones. In order to have double the number of London over provincial members the London members should be increased by 19 (which is impossible), or 12 provincial members should resign.

But the members of the Council vary in inverse ratio, as all past Presidents are *ex officio* members of the Council; thus the number of London councillors is 13, against five provincial ones. Yet just at this time the Council have repudiated altogether their verbal agreement, and by force of superior numbers have elected London members as President and both Vice-Presidents.

The London members, too, have always an advantage in their ability to attend, as the loss of time and serious costs of journeys from the provinces prevents members attending so regularly. The average annual provincial attendance is five (which I think is good), compared with eleven London attendances.

The matter is one of such importance to provincial surveyors, who are thus being entirely swamped by London men, that I have protested to the utmost, unfortunately without effect, and I have therefore resigned my membership of the Association rather than stultify the honourable office to which I have been so frequently elected; and as the only time to act effectually is at the commencement of any irregularity, may I ask you to permit me to appeal through your paper to provincial quantity surveyors for their opinion of the loyalty to my stewardship?

My figures are the official published ones for the last year.—Yours obediently,

W. HOFFMAN WOOD.

No. 8 Queen Square Chambers, Leeds:
November 4, 1912.

MR. B. C. ANDREW, St. Austell, has been appointed local hon. secretary of the Society of Architects.

The Architect.

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FORTHCOMING EVENTS.

Saturday, November 16.

Architectural Association : Visit to the Wesleyan Church House, Westminster, S.W.

Edinburgh Architectural Association : Visits to New Masonic Hall and New Hall of United Free Church of Scotland, 121 George Street, Edinburgh.

Monday, November 18.

Royal Institute of British Architects : A paper entitled "Bath : A Comparative Study," by Mr. J. L. Bail, at 8 p.m.
Liverpool Architectural Association : A paper entitled "The Original Drawings for the Palace at Whitehall, attributed to Inigo Jones," by Mr. J. A. Gotch, F.R.I.B.A., at 6 p.m.
Institute of Sanitary Engineers : Paper entitled "Intercepting Traps in House Drains," by Mr. E. Van Putten, M.Inst.C.E., at 8 p.m.

Tuesday, November 19.

Institution of Municipal Engineers : North-Western District Committee meeting at Manchester at 7.30 p.m.
Illuminating Engineering Society : Meeting at the premises of the Royal Society of Arts, John Street, W.C., at 8 p.m.
Royal Sanitary Institute : Adjourned discussion on "The Report of the Departmental Committee on Intercepting Traps and House Drains" (opened by Mr. H. Percy Boulnois, M.Inst.C.E.), at 8 p.m.

Wednesday, November 20.

Northern Architectural Association : Students' Meeting at 6 Higham Place, Newcastle, at 6 p.m.

Thursday, November 21.

Architectural Association : Conversazione at 8 p.m.
Leeds and Yorkshire Architectural Society : Opening Meeting at Queen's Hotel, Leeds, at 7.30 p.m.

MEDIAEVAL FIGURE-SCULPTURE IN ENGLAND.

A SENSE of the amplitude of mediæval art is the dominant impression that we gather from a first perusal of the masterly work* on English figure-sculpture in the middle ages with which Mr. Prior and Mr. Gardiner have endowed us, a field in the corners of which many students and enthusiasts have delved, but whose whole area is now harvested for the first time.

Mediaeval figure-sculpture may be grouped in one or other of two dominant classes, work in the shop and work on the building, and throughout the whole period covered by the authors they ever seem to have this classification in mind and are particular to note when the latter class was independent and distinct, when it was influenced or dominated by the former. It is, however, the view of the authors that, notwithstanding this influence or even at times domination, the real mediæval figure-design was that which was worked all through the ages of mediæval building in the architectural fabric.

Hence the sculpture was always work in building-stone and subject to the capabilities and limitations of the material. The textures of marble and bronze are foreign to its nature, the technique of the craftsman in these materials impossible to the mason and stone-cutter. The mediæval figure-sculptor was but a higher grade of craftsman amongst the masons who worked ashlar, cut mouldings, or carved foliage, and his work was as much part of the architecture as that of his slightly less skilful co-workers. "His art must be accepted as that of a sculptor *lapidum*, not of a modeller with clay or of a goldsmith at his bench."

From the intimate connection of the mediæval figure-sculptor with the actual building it naturally follows that his work is essentially architectonic, it is as much part of the structure as the mouldings or the wall face. Hence it is that we find the general character of the architecture of the period reflected in the figure-sculpture. The strength and intensity of contrast in chiaroscuro of Early English, the delicacy of gradation and of flowing line in Decorated, and the mechanical richness of Perpendicular, all have their counterparts or complement in the figure-sculpture. "In its architectural consistency at least our mediæval art has nothing to ask from the Greek."

* *An Account of Mediæval Figure-Sculpture in England.* With 855 Photographs. By Edward S. Prior, M.A., F.S.A., Slade Professor of Fine Art in the University of Cambridge, and Arthur Gardiner, M.A., F.S.A. (London: Cambridge University Press. 63s. net.)

In another respect also we are glad to find that our authors recognise, as, indeed, the thoroughness of their studies would oblige them to do, that Gothic architecture including its sculpture was akin to the Greek—in the adornment or completion of its finishing with colour and even plaster. The Greek covered his Poros stone and even on occasion his marble with stucco and paint. The mediæval craftsman did likewise.

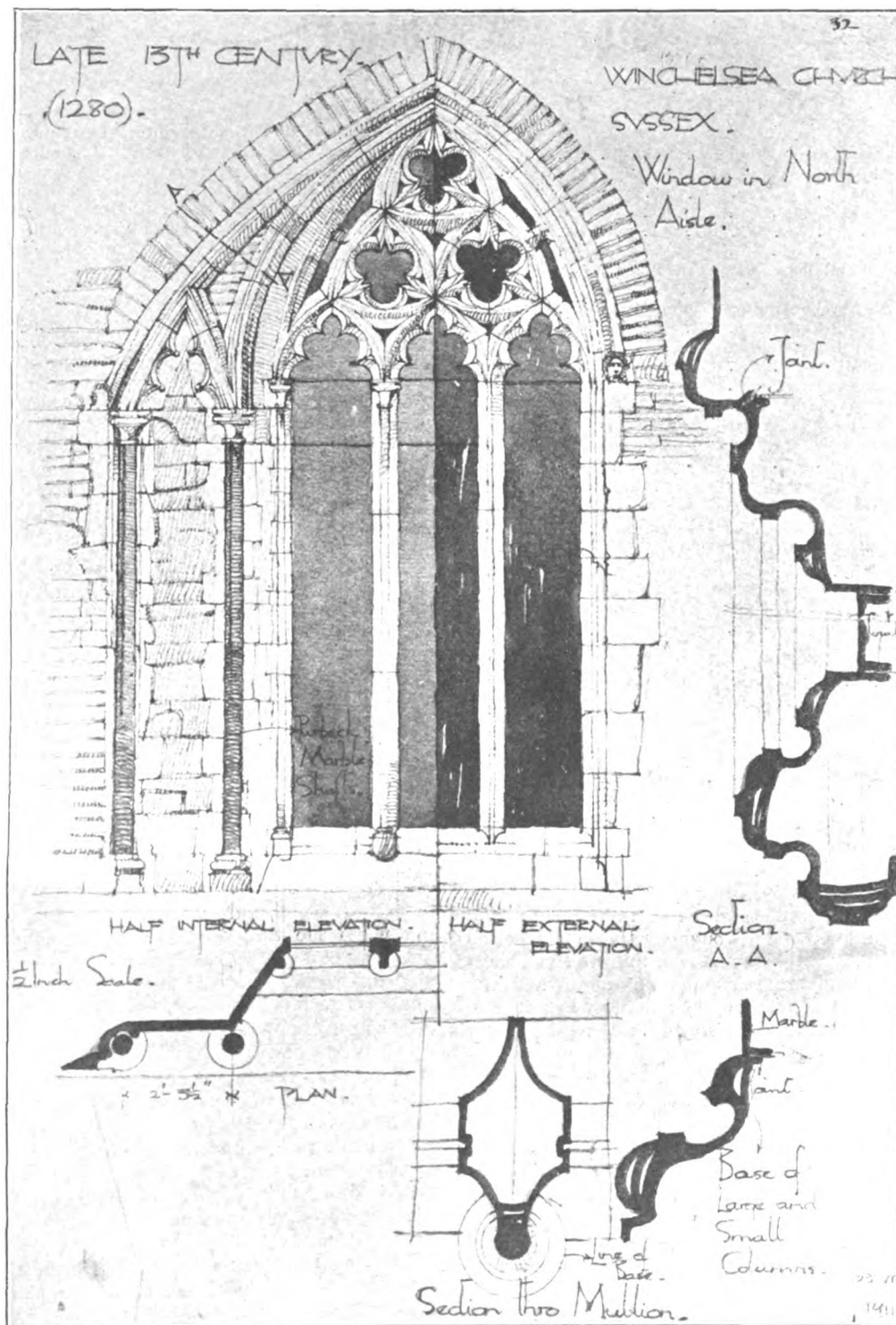
It is remarkable as further evidence of the position of figure-sculptors in the middle ages who were only sculptor-masons and not sculptor-artists, or at any rate did not pride themselves on being such, that, as the authors point out, Gothic figure-sculpture is never found signed, that we know of, in England, nor are there any notices to show that any special artistic distinction attached to the makers of the most beautiful of art stone reliefs or statues.

Thus the figures for the Westminster chapter-house are described in the accounts only as "*II imagines ad tascham cissas*"—"two figures dressed by the job"—there being no mention of the sculptor.

Even when the names appeared of persons to whom orders were given for sculptured figures it seems that these were merely intermediaries between the client and the craftsman.

During the 14th century, however, there evidently came into vogue the employment of makers of detached figures to order, alongside of the metal working imager, or shop sculptor, whose work was chiefly in metal, and in the 15th century the shop sculptor, whether in metal or stone, seems to have been dominant. For marble figures the shop worker had been in existence from about the beginning of the 13th century, and included amongst them were the workers in alabaster. These craftsmen, however, although working alongside of, and contemporaneously with, the sculptor-mason on the building, are not admitted by the authors as exponents of characteristic mediæval figure-sculpture. It would perhaps be more correct, as well as more generous, to recognise that there were two distinct branches of mediæval figure-sculpture which offered scope for the work of artists of separate class with different aims and potentialities, but each entitled to cordial recognition.

In their detailed treatment of the subject the authors do not ignore the work of the shop sculptors, and thus tacitly admit the position of which we have spoken. They have, indeed, devoted special chapters to the City trade furniture and a special section of their volume in Book III. to the sepulchral effigy.



SUBMITTED FOR PUGIN STUDENTSHIP, 1912.—FROM MEASURED DRAWING BY MR. J. B. LEATHART.

In dealing with the work of the building sculptor the authors have adopted the chronological treatment commencing with the consideration of pre-Conquest figure-sculpture, then Anglo-Norman, and later Romanesque, followed by the architectural work of the three Gothic periods.

In dealing with each of these chronological periods the authors take note of and classify various sub-divisions which appear in each. In this way they give us a very complete analysis, and render comparison easy and clear between the various phases of development and the divergence in the treatment of mediæval figure-sculpture. Thus in the treatment of shop sculpture there is not only a distinction drawn by the authors with regard to the work of different schools, chiefly differentiated by locality, but there is classification and sub-division of the subject according to material used, so that whilst they dis-

tinguished between the characteristics of South-Western, Northern, and Midland districts, we have also distinction between the treatment of Purbeck effigies and freestone effigies, and also of those in bronze, oak, alabaster, and clunch.

By thus sub-dividing their analysis of English figure-sculpture into many sub-sections and treating of each thoroughly the authors have produced a splendidly complete conspectus of mediæval figure-sculpture in England in all its branches.

NOTES AND COMMENTS.

THE Joint Select Committee of the House of Lords and the House of Commons on the three bills before Parliament, relating to the protection of ancient monuments, have issued their report and expressed the opinion that

the Ancient Monuments Consolidation and Amendment Bill (House of Lords) should alone be allowed to proceed. Amongst the salient points in the report is an expression of opinion that the care of ancient monuments should be entrusted to the Commissioners of Works or the council of a county or county borough. In return for the restriction on the rights of property placed upon the owners of ancient monuments, exemption is recommended from liabilities for probate or death duties. This is obviously no more than is fair if owners of ancient monuments are to be prevented for the good of the State from realising and turning into hard cash their property; they thus become, in a sense, trustees for the nation, and ought not to be expected to pay for their enjoyment of the full rights of ownership which they no longer will possess. The Committee are not prepared to recommend the exemption of ecclesiastical buildings from the provision for their preservation as ancient monuments, and they rightly, in our opinion, justify their position by reference to the undoubted fact that although the ecclesiastical authorities are acknowledged to be increasingly alive to their duty of protecting old churches, there are still cases where due regard is not had to architectural and historic considerations. Not only the buildings, but movable property, such as plate and other articles of historical interest, belonging to the Established Church are, according to the recommendations of the Committee, to be by law protected. This, as recent history shows, is a very essential provision, and the property of municipal corporations is, we are glad to know, to be subject to similar treatment.

An important and interesting report has been presented to the Manchester Corporation by Mr. Haydn T. Harrison and Mr. Jacques Abady, on modern lighting systems in Princess and Portland Streets in that city, the former being lighted by gas, and the latter by electricity. In Princess Street modern high-pressure gas lamps of high power are used; in Portland Street efficient flame-arc lamps are used, so that we may fairly say that gas and electricity are here given an opportunity, each in an effective form, of demonstrating their relative advantages. The experts were not entirely agreed, and presented separate and, to some extent, antagonistic reports, but they do agree upon the following points:—(1) That for all practical purposes the degree of illumination in Portland Street and Princess Street is approximately equal. (2) That, based upon the figures of costs of current, and gas, &c., given them by the respective departments, the arc lamps as used in Portland Street are provided at an annual cost which is less than the gas lamps as used in Princess Street. (3) That, as a comparison between the possibilities of arc lighting and high-pressure gas lighting, the results are vitiated by the fact that the high-pressure gas lamps are giving an efficiency very much below similar lamps when properly installed and adjusted.

In the course of their reports the experts have drawn attention to the importance of the method of distribution of the light as affecting its efficiency. They tell us that the most desirable distribution is an increase in candle power as the angle to the horizontal becomes less down to fifteen or twenty degrees. Neither the arcs nor the gas lamps give ideal distribution, but, except for the shadow below the arcs, the former perhaps approach nearer to perfection than the gas lamps. To some extent the particular light distribution of a type of lamp can be allowed for by suitably choosing the height and the distance apart of the lamps. Thus, judging from the distribution, the ratio of height to horizontal distance should be greater for the arcs than for the gas lamps. This is, in fact, the case in the Manchester test installations, but Mr. Abady apparently thinks that advantages in other directions would be secured by lowering the gas lamps from 26 ft. 6 in. to 20 ft. and increasing the distance apart from 107 ft. to 130 ft. The arcs are spaced 121 ft. at a height of 27 ft. 6 in.

We regret to have to record the death of Mr. George E. Grayson, the well-known Liverpool architect. Mr. Grayson was for many years head of the architectural profession in Liverpool. He commenced practice in 1860, on the completion of a long tour in Southern Europe. His best known works include the City Liberal Club, Walbrook, London; the Rainhill County Asylum, the Grain Stores at the north end of Liverpool, and the head office of the Bank of Liverpool. In Castle Street he had almost a monopoly, for he designed the offices of the British and Foreign, Scottish Equitable, Scottish Provident, Messrs. Jones & Sons' premises, Leyland and Bullens Bank, Victoria Chambers, and the extension of the N. and S. Wales Bank. His churches include St. Mary's, Liscard; St. Faith's, Waterloo; and the parish churches at Allerton and Woolton; while innumerable small houses and many large country mansions were designed by him in various parts of England. For many years Mr. Grayson was on the Council and the Practice Committee of the Royal Institute of British Architects, and he was president of the Liverpool Architectural Society in 1886. He was a freeman of the City of London, and served on the Livery of two of the ancient City Companies. He took the late Mr. E. A. Ould into partnership in 1886, and Mr. Hastwell Grayson in 1896, and retired from practice on the last day of the nineteenth century.

BRITISH SCHOLARSHIPS AT ROME.

PARTICULARS have just been issued of the British "Prix de Rome" in sculpture and decorative painting. These scholarships, of the value of £200 per annum each, will be tenable for three years at the British School at Rome. Candidates must be British subjects, and less than thirty years of age on July 1, 1913.

The competition for the prize in sculpture, which will be conducted by the Faculty of Sculpture of the British School at Rome, will be in two stages: (a) An open examination; (b) a final competition, open to not more than four candidates selected from those competing in the open examination. In the open examination competitors must submit the following works: (1) A model of a nude figure in the round from the life, half life size. The model to be executed by the competitor. (2) A model in bas-relief, two feet six inches by one foot six inches, modelled and designed by the competitor, the composition representing not less than two figures. (3) Four drawings from the life, two of which must be of the nude figure, one of drapery, and one of hands and feet life size. The drawings must be the work of the competitor, and must be on sheets of paper thirty by twenty inches. (4) Some drawings or photographs, or both, of original works which have been designed by the candidate. (5) Not less than two photographs or drawings of designs for decorative purposes with architectural features, the designs to have been the work of the candidate.

Competitors must notify the Honorary General Secretary, British School at Rome, 54 Victoria Street, London, S.W., of their intention to compete in this examination not later than February 15, 1913, and with such notification must enclose a certificate of birth, or a declaration as to age and nationality duly attested by two responsible persons. The models must be cast in plaster, and together with the drawings and photographs (which must be unframed and unglazed), addressed to the Honorary General Secretary, British School at Rome, care of James Bourlet and Sons, Ltd., 17 Nassau Street, London, W., and delivered at that address not later than April 5, 1913. The words "Scholarship in Sculpture" should be clearly marked on the outside of each case. The names and addresses of competitors must be clearly written and attached to each work. The works must be forwarded at the candidate's expense. The works will be returned to candidates at their own expense. The Faculty will undertake no responsibility in the case of any damage or loss.

The final competition will be held in London from June 30 to August 23, 1913, and will be open to not

more than four candidates selected from those competing in the open examination. The subject will consist of a design for a figure, group, or relief (as determined by the Faculty of Sculpture), to fill a given space for a given purpose, and to a given scale. Eight weeks will be allowed for the execution of the design, and during that time candidates will be provided with studio accommodation, and given an allowance of 2*l.* per week towards the cost of models, etc. The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship.

The scholarship in decorative painting is open to competition on very similar lines.

The competition, which will be conducted by the Faculty of Painting of the British School at Rome, will be in two stages: (a) An open examination; (b) a final competition, open to not more than four candidates selected from those competing in the open examination.

Competitors in the open examination must submit the following works: (1) Not less than four drawings of the nude figure from the life. (2) One painting of a head, and one painting of a figure from the life in oil or tempera. (3) Two figure compositions in colour suitable for wall decoration (not larger than thirty inches by twenty-two inches). (4) Sketches of designs for decorative purposes, which should include some architectural studies. Competitors must notify the Honorary General Secretary, British School at Rome, 54 Victoria Street, London, S.W., of their intention to compete in this examination not later than February 15, 1913, and with such notification must enclose a certificate of birth, or a declaration as to age and nationality duly attested by two responsible persons. The works submitted for the open examination must be addressed to the Honorary General Secretary, British School at Rome, care of Messrs. Chapman Bros., 241 King's Road, Chelsea, London, S.W., and delivered at that address not later than April 5, 1913. The words "Scholarship in Decorative Painting," should be clearly marked on the outside of each package. The names and addresses of competitors must be clearly written on the back of each drawing, painting, etc. The works must be sent unframed and unglazed, and must be forwarded at the candidate's expense. The works will be returned to candidates at their own expense. The Faculty will undertake no responsibility in the case of any damage or loss. The final competition will be held in London from June 30 to August 23, 1913, and will be open to not more than four candidates selected from those competing in the open examination. The subject will consist of a design for a wall decoration to fill a given space for a given purpose, and to a given scale. Eight weeks will be allowed for the execution of the design, and during that time candidates will be provided with studio accommodation, and given an allowance of 2*l.* per week for models. The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship.

For the prize in architecture candidates must be less than thirty years of age at the date of entry for the final competition in September 1913. The examination will be graduated in three stages:—(a) An open qualifying examination, the closing date for entry to which was October 31 last; (b) a first competition, open to candidates selected in the open qualifying examination, to the winners of certain scholarships, and to candidates nominated by certain bodies; (c) a final competition, open to not more than ten candidates selected from the candidates in the first competition. For the first competition the following candidates will be entitled to enter. (1) The candidates selected in the open qualifying examination. (2) Winners of the R.A. travelling studentships and of the following R.I.B.A. studentships:—Soane Medallion, Tite Prize, Owen Jones Studentship, Ashpitel Prize, Grissell Medal. (3) Candidates nominated by the following bodies, with a maximum of four from any given institution:—(a) The Royal Academy. (b) The Royal College of Art. And the following institu-

tions "recognised" by the Royal Institute of British Architects:—(c) Edinburgh—The Edinburgh College of Art. (d) Glasgow—The Glasgow School of Architecture. (e) Liverpool—The Liverpool University School of Architecture. (f) London—The Architectural Association of London. (g) London—The London University School of Architecture. (h) Manchester—The Manchester School of Architecture. (i) Sheffield—The Sheffield University Department of Architecture. (4) Candidates nominated by the allied societies of the Royal Institute of British Architects in the colonies. The subject will be set by the Faculty, who will also determine the number and character of drawings required. Candidates will be allowed two months for the preparation of their designs, reckoned from the date of the issue of the subject with its conditions. From the candidates who have competed in the first competition the Faculty will select not more than ten candidates for the final competition. The subject for this competition will be set by the Faculty, and will be announced in the room on the opening of the first sitting of the competitors. The competition will be held *en loge* in London. It will begin at 10 A.M. on a Monday morning and continue till 1 P.M. on the Saturday of the second week following. Competitors will be required on the first day to make a sketch design which shall be covered with a sheet of tracing paper sealed down in the compartment by the Moderator at the end of the first day. In their finished designs the competitors must adhere generally to the idea of the sketch design. The Faculty will select the successful candidate for the Commissioners' Election. The date of the first competition will be March 15 to May 15, 1913. The date of the final competition will be September 15 to October 4, 1913. It is the intention of the Faculty of Architecture to arrange the announcement of subjects for the open qualifying examination and for the first competition so as to enable students in the Dominions to have the same time for the preparation of their designs as the students at home.

NOTES ON BOOKS.

"The Construction of a House. Being the study of building construction presented by means of a set of forty plates containing plans and detail drawings, with letterpress, of a design for a country house, including motor house and chauffeur's lodge." By Charles Gourlay, B.Sc. (Glasgow University), A.R.I.B.A., architect, professor of architecture and building construction in the Glasgow and West of Scotland Technical College. (London: B. T. Batsford. 6*s.* net in portfolio; 6*s.* 6*d.* net bound.)

It has often been said by those who have been giving advice to students in the form of presidential or other addresses that it is far better for a student to make a complete study of some one old building and to understand it than to run about over a wide expanse of country picking up little bits here and there and so making a collection of unrelated fragments.

It is probably with some such thought in his mind that Professor Gourlay has prepared for the use of students of construction this volume containing a complete set of drawings illustrating the planning and construction of a house from start to finish, and this he has done very thoroughly, so that the student who has learnt from other text-books the isolated elements of construction in various trades may now be able to follow their application and mutual dependence in the carrying out of a complete building.

The methods of construction and the naming of the various items are naturally tinged with a Scotch flavour, although the author has in some cases given the English translation of terms which would otherwise be unintelligible to the Southerner.

Thus it strikes one as peculiar that no footings are shown to the walls and the construction of an oriel window is rather differently arranged to that which we should

ordinarily follow; but, although we may find differences, we do not find any fatal errors, so that the book may be recommended as a useful series of exercises for the student who is advanced beyond the elementary stage in his study of construction, especially as many details of fittings are given which in the ordinary way are not included in textbooks.

"The House and Its Equipment." Edited by Lawrence Weaver. (London: "Country Life" and George Newnes, Ltd. New York: Charles Scribner's Sons. 15s. net.)

A house does not become a home until it is equipped and furnished, and no amount of satisfactory planning of rooms and other adjuncts, or sound construction of walls, floors, and roofs will make a home as satisfactory as it ought to be if its equipment and furnishing are bungled, and therefore Mr. Lawrence Weaver has done good service in showing what a number of things there are that go to the satisfactory equipment of a house, and how much better they are managed when the architect who designs the house regulates throughout its equipment and even its furnishing. This is a lesson which the Englishman particularly needs to learn. On the Continent it is generally recognised that the architect is the proper person to regulate and decide the furnishing as well as the equipment of a house, and that this demands a greater amount of experience and artistic training than can be expected from the efforts of the ordinary housewife perambulating the showrooms of Tottenham Court Road. A great many different sections connected with the subject are treated of in the volume edited by Mr. Weaver, and he has adopted the sensible plan of securing contributions from twenty-three different writers who may each be regarded in some sense as a specialist, so that all matters are adequately treated to a far greater extent than any one writer, however omniscient he may think himself, could possibly achieve. For this reason there are few chapters in the book from which the architect in general practice cannot obtain additional information on the most up-to-date methods of equipping a house. To the man who would build or try to improve his house such a book must be of great value in its indication of the possibilities that lie open at the present day for making a house and its adjuncts both beautiful and comfortable.

"Colour Printing and Colour Printers." By R. M. Burch. With a chapter on modern processes by W. Gamble. (London: Sir Isaac Pitman & Sons, Ltd. 12s. 6d. net.)

Modern processes of colour printing have now brought within the limits of commercial possibility the production of printed books with coloured illustrations, and there are several processes now in use which each have their peculiar qualifications, so that it is desirable for anyone who is contemplating the authorship of a publication in which colour printing is to take part to learn something of the history of the industry from the fifteenth century onwards, so that he may not only know what has been and can be done at the present day, but also the special effects that can be got from the processes of the past which, although not now in general use, have, nevertheless, their own peculiar charm and effect. Such knowledge as is here indicated is to be found in the volume before us, which is not only instructive, but interesting to all who have any affection for books and book-making.

"Building Structures in Earthquake Countries." By Alfredo Montel. Translated from the Italian with additions by the author. With 42 diagrams in the text and one plate. (London: Charles Griffin & Co., Ltd. 8s. 6d. net.)

In this country we are fortunately but little troubled with earthquakes of a serious or severe character, but we do occasionally experience the tail end of a seismic wave, and there are areas in some parts of England that for some reason or other are more prone to such experiences than the greater part of the country, so that

architects and builders within these zones may find it desirable to make a study of the experience and research that have been the fountain of knowledge to Italian and Japanese constructors. Such a book as the present will be a necessity to the British students of architecture who propose to practise their calling in the dominions beyond the seas or in the outposts of British influence in the Far East.

The author in dealing with this subject has adopted and added to his own knowledge and experience the labours particularly of Professor Omori, in Japan, where, as we all know, there is plenty of opportunity for observation and experience, and at the present day sufficient scientific training and insight to make the fullest use of the experimental opportunities and to deduce from them valuable lessons in procedure.

"Ornamental Cement Work." By Oliver Wheatley. With 81 illustrations. (London: Scott, Greenwood & Son. 5s. net.)

In the truthful days of the Gothic revival of the last century the idea of any legitimate use of cement or plaster as a material in itself capable of artistic employment would have been regarded as the most rank heresy, for it was forgotten by the majority of Gothic enthusiasts that the productions of the *stuccatori* of the 16th, 17th and 18th centuries conclusively prove that cement or plaster is a material capable of a high degree of durability and of a wide range of artistic expression, provided only that it be treated as a material with its own peculiarities and possibilities and not as a cheap and nasty method of simulating stone work. The author of the present volume has limited his subject to Portland cement, to the exclusion of other forms of plaster which were brought to so high a degree of excellence by the *stuccatori* of old, and he has certainly given us an admirable insight into the possibilities of the treatment of Portland cement as a legitimate material for finished work with a true artistic character provided the man who handles it is an artist.

GREENSTEAD AND ONGAR.*

GREENSTEAD is the Gernesteda of Domesday Book. Its claim upon our intelligent interest is a twofold one. The timber nave of the present church is of pre-Norman date, and the church holds the traditional honour of having temporarily held the remains of the martyred Edmund, King of East Anglia. The illustrated edition of John Richard Green's "Short History of the English People" pictures a coin of the King, and that historian describes the events leading up to Edmund's death. In 866 the Danes landed in East Anglia, and marched in the next spring across the Humber upon York. Northumbria at once submitted to them, and Mercia was only saved by a hasty march of King Ethelred to its aid. But the peace of Nottingham, by which Ethelred rescued Mercia in 868, left the Danes free to turn to the rich spoil of the great abbeys of the Fen. Peterborough, Crowland and Ely went up in flames, and their monks fled or were slain among the ruins. From thence they struck suddenly for East Anglia itself, whose king, Edmund, brought prisoner before the Danish leaders, was bound to a tree and shot with arrows. This martyrdom by the heathen made him the St. Sebastian of English legend. In later days his figure gleamed from the pictured windows of church after church along the eastern coast, and the stately abbey of St. Edmundsbury rose over his relics. With Edmund ended the line of East Anglian under-kings.

The authority for the belief that the saint's body rested in Greenstead Church is Dugdale, who says in "Monasticon" that "it (the body) was lodged at Aungre, where a wooden chapel remains as a memorial to this day. The removal of the remains from London to their final resting place at Bury St. Edmunds took place about 1013."

The church, dedicated in honour of St. Andrew, contains nothing earlier, with the exception of the ancient wooden nave, than the late Perpendicular chancel of red brick; the roof windows and the tower of boards are of modern date, but the whole composition is certainly picturesque, and forms an attractive picture. The ancient woodwork has

* Read at a meeting of the Upper Norwood Athenaeum, by Mr. T. H. Alexander.

not been left undisturbed in the course of time, for although it has weathered the effects of almost exactly 800 years, yet some of it was replaced in 1848, having become worm-eaten. The dimensions of the original nave, as given by "Murray," are 29 feet 9 inches long by 14 feet broad. The walls are 5 feet 6 inches high. There are sixteen logs and two door-posts on the south side, and twenty-one logs and two gaps plastered up on the north side.

The manor of Greenstead was held by Gotild in the reign of Edward the Confessor, and at the Domesday Survey by Hamo Dapifer, with Serlo under him.

On the death of Hamo Dapifer, without issue, his lands descended to his brother, Robert Fitz-Hamo, to whom King William II. gave the honour of Gloucester. He died in 1107, and Maud, or Mabel, his eldest daughter, was married to Robert, natural son of King Henry I., created Earl of Gloucester, to whom she conveyed her uncle Hamo's large inheritance. He died in 1147.

It is not certainly known whether King Stephen took this estate from him on account of his adherence to his competitor, the Empress Maud; however, William, Stephen's son, gave Greenstead, together with Chipping Ongar, to Richard de Lucy, from whose family it passed to that of Rivers, after whom it was conveyed to William de la Hay and the noble family of Stafford, under whom it was holden by the Bouchier family; and on the premature death of Henry, Earl of Essex, in 1540, this, with his other great estates, became the inheritance of his daughter and heiress, Anne, married to William, Lord Parr. Sir Richard in 1548, 1561, and at the time of his death in 1566 held this manor, which belonged to Wm. Bourne, Esq., of Bobbingworth, in 1593, and to the Young family in 1661, from whom it passed to Mr. Gutton, who sold it to Alexr. Cleve, citizen of London, after whom the next possessor was David Rebotier, succeeded by his son, Charles Rebotier.

Ongar possesses a name of very doubtful origin, the general guide-book derivation being "Angra," a separated portion of land. This definition does not appear to bear any relation to the earliest feature of the place—the early entrenchment which surrounds the village. Now, the most ancient thing after the land is the river, and this plainly reveals the Gaelic *rhe* in its name of Roden or Roding. It might be possible to find the ancient form of Aungre in the Celtic Avon, pronounced Aune, and spelt Anne in the case of a Devonshire river. Both words, *rhe* and *avon*, denote a river or flowing stream. The encampment, if it be British or Celtic, would be known as the *don* on the river, and the river-name would prevail for identification.

The Saxon origin of the village is determined by the name, Chipping Ongar, it has always possessed. It was the market place of the district, just as were Chipping Norton, Chipping Campden, Chipping Sodbury, and Chipping Barnet; the latter still retains its horse fair or market. So we have Cheapside and Eastcheap, all derived from the A.S. *ceapian*, to buy; *cypan*, to sell; and *ceap*, price. Another title this place of names has had in the past is Ongar ad Castrum. The castle, built by Richard de Lucy, the founder of Lesnes Abbey, gave the village this distinction. It should be remarked that the river Roding divides Ongar into two parts; one is called Chipping Ongar, the other High Ongar. Ongar was given to Richard de Lucy, who died in 1179, by the Earl of Montaigne, son of King Stephen. Later, Henry II. seized it, amongst many others, and the castle passed into the hands of Rivers de Dipariis, and afterward to the Lords Stafford. It was destroyed in the sixteenth century, and a brick building erected in its place, which, in its turn, was taken down in 1744.

ROYAL GARDENS AS PAINTED BY MR. CYRIL WARD.

THERE are two classes of exhibition which it is difficult for an art critic to discuss satisfactorily; that is to say, if he (or she) is to escape being in turn criticised. These two classes are the unmistakably good and the unmitigatedly bad. For, in doing justice to the former, the critic is regarded publicly as being devoid of the faculty of discrimination, whilst in lashing the latter class the same unfortunate critic is charged as acting on the principle of "Nil admirari." Therefore it is that an exhibition with an admixture of qualities is apt to provide the best material for such a purpose as art criticism. Of course to any art lover this point of view is altogether undesirable; Art for its own sake will require that work shall be good; and the more of this quality and the finer in degree the better.

Moi, qui parle—have from time to time the good fortune (being imbued with the concentrated love of Art) to encounter an exhibition of works altogether good; even as — infandum dolores mihi! at times, and unfortunately there is presented to the gaze a show unutterably debased, unspeakably poor. In such instances the aspect in which the criticism will be regarded by the public must be set aside entirely for the aspect in which it is necessary to regard the exhibition.

Here and now good fortune provides a feast for eye and soul—one had almost added, heart—in the excellent show of works presented by Mr. Cyril Ward on the walls of the Fine Art Society. The subject is full of fascination, and Mr. Ward has made the most of his subject; there is no slightest appeal to the snob in this collection of views of Royal gardens—no figures of royalty, nor even their flunkies or gardeners or pet dogs—merely and solely the landscape views.

But is not this enough when so presented? Granted that under average conditions animal interest in any picture is a desideratum, there are occasions when the specific purport neither requires nor renders fitting the inclusion of life other than that of vegetation. True it is that in the absence of animal life a certain lack of scale may obtain; but somehow it does not seem to be a noticeable deficiency in Mr. Ward's charming sketches, one alone of which provides animal life in the form of swans in "Across the lake, Claremont." A certain proportion of these sketches have been reproduced in a handsome work, written by Mr. Ward, and this volume will doubtless find its way on to many a library table.

Time and again mention is made of an artist's "bright palette," but here the palette is subdued, without being dull. It is as if the habitual haze of the British Isles has been carefully borne in mind by the artist with a resultant sincerity in effect that pleases, without causing any slightest sensation of depression. Mr. Ward's treatment of flower banks is marvellously effective, and his tree modelling is indicative of a close and loving study of arboriculture. Like the Preacher of old, he knows all trees "from the cedar tree that is in Lebanon, even unto the hyssop, that springeth out of the wall." One sketch shows "Osborne House and Terraces," and it cannot but be regretted that this royal residence and Colney Hatch Asylum should mutually suggest each other; the fault lies with the asylum authorities presumably. Imitation may be the sincerest form of flattery, but there are times—. However, this has nothing to do with Mr. Ward's works, of which it seems hopeless to select specimens, where all are so very good. Let the public take the hint and slake its thirst, by imbibing refreshing draughts of Art and Nature at this veritable Pierian spring.

ILLUSTRATIONS.

ANTE-ROOM, PEMBROKE HOUSE, WHITEHALL.

THIS measured drawing by Mr. A. E. Bullock further illustrates the work described by him in his chapter on "Interior Decoration" in our last week's issue.

MUNSTER LODGE, TEDDINGTON.

THE accompanying illustrations exemplify the possibilities of the conversion of old and badly designed houses into designs of interest without seriously interfering with the structure and at moderate expenditure. "Munster Lodge" was originally of the "Victorian builders' type of design, with innumerable battlements to the main roof and front porch and senseless plaster mouldings round the windows. The gables were flat, with wavy barge boards, and the roofs covered with blue slates and the walls plastered with Roman cement.

The principal living-rooms all faced the front fence and overlooked small properties, whilst the garden front, facing a very fine and well-wooded garden extending down to the river, was occupied by larders, store-rooms, and lavatories, completely preventing the full enjoyment of the house and garden.

The growth of small property in front of the house emphasised the necessity of turning the house round.

The alterations, which are simple in their character, have completely remodelled the house, and consisted of a rearrangement of the offices and construction of a new dining-room in the position previously occupied by the offices.

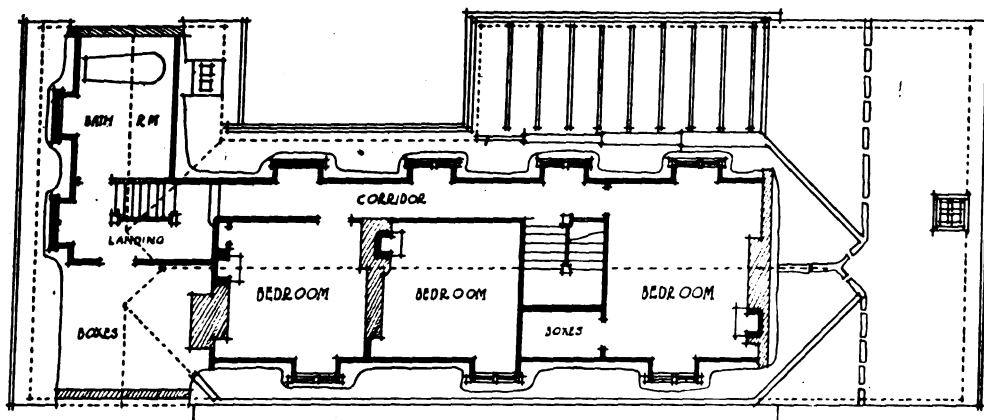
The introduction of a large projecting lead lighted window in the drawing-room, in place of a small sash window, converted a depressing room into a most pleasant one, from which good views of the gardens are obtained.

The roof was removed to the plate level, and re-roofed to a sharp pitch and covered with red sand-faced tiles, the chimney stacks being continued through the roofs in thin Daneshill bricks. Advantage was taken of the extra space gained by the re-roofing to add three bedrooms and a bathroom to the accommodation.

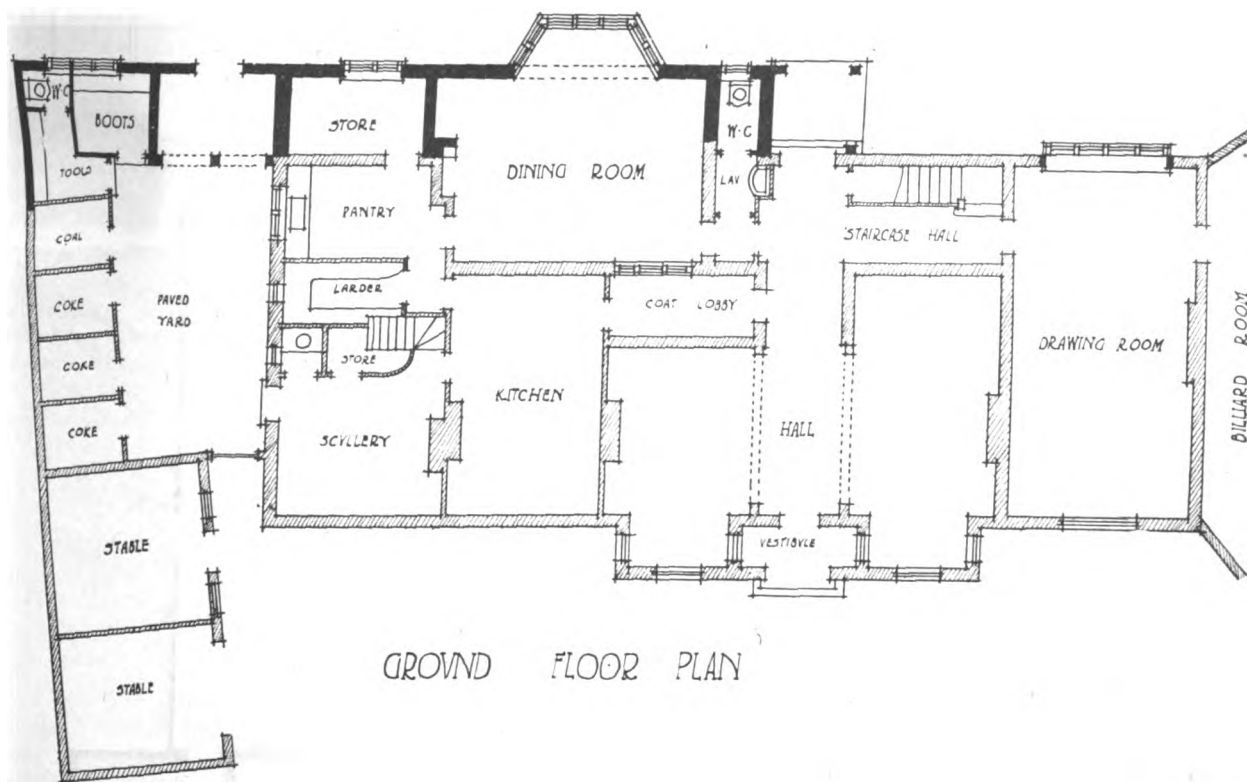
The exterior was stripped of all mouldings and cement work and finished with a white cement rough cast, the old cement sills being replaced with moulded stone sills, and the front elevation relieved by teak Venetian shutters.

from an architectural point of view, are well worth the trouble involved.

For example, take an ordinary flat-faced villa with square openings for the windows, and with all the usual jerry builder's ideas of detail, and place it in the hands of an architect who will give careful study and consideration to the matter, and in all probability he will be able to entirely improve the appearance, with very little more expense than the introduction of a well-designed and suitable cornice to the eaves, and the adjustment of the proportion of the window panes; and in the event of the windows being suitably placed the introduction of shutters, as a frieze, will often restore the balance of the parts. A well-designed entrance door will often complete and give interest to the scheme of conversion. The treatment of the sides and back



SECOND FLOOR PLAN



GROUND FLOOR PLAN

MUNSTER LODGE, TEDDINGTON

The battlements to the porch were replaced by a bold oak cornice, and the front entrance door made a feature, by the introduction of thin Daneshill brickwork.

The dining-room is panelled with oak, and the ceiling has oak moulded beams supported by carved oak brackets. The bay window is of solid oak framing glazed to the floor level with leaded lights and wide iron casements, the central casement forming a French window.

A temporary tarpaulin roof was used for the carrying out of the work, which was executed without materially disturbing the working of the house, the family being in residence the whole time.

Too little attention has in the past been given to the possibilities of converting badly designed buildings into buildings of interest; the field is a large one, and well worth the serious consideration of architects. The results to be obtained in the increased value of the building, as well as

of these buildings in accordance with the front is of vital importance.

The interior arrangements are often extremely simple of conversion by nothing more expensive than a few lengths of 4-inch by 2-inch deal slats replacing the well-known fussy mouldings round the doors, windows and walls, and careful attention to the possibilities of the fireplaces and stairs.

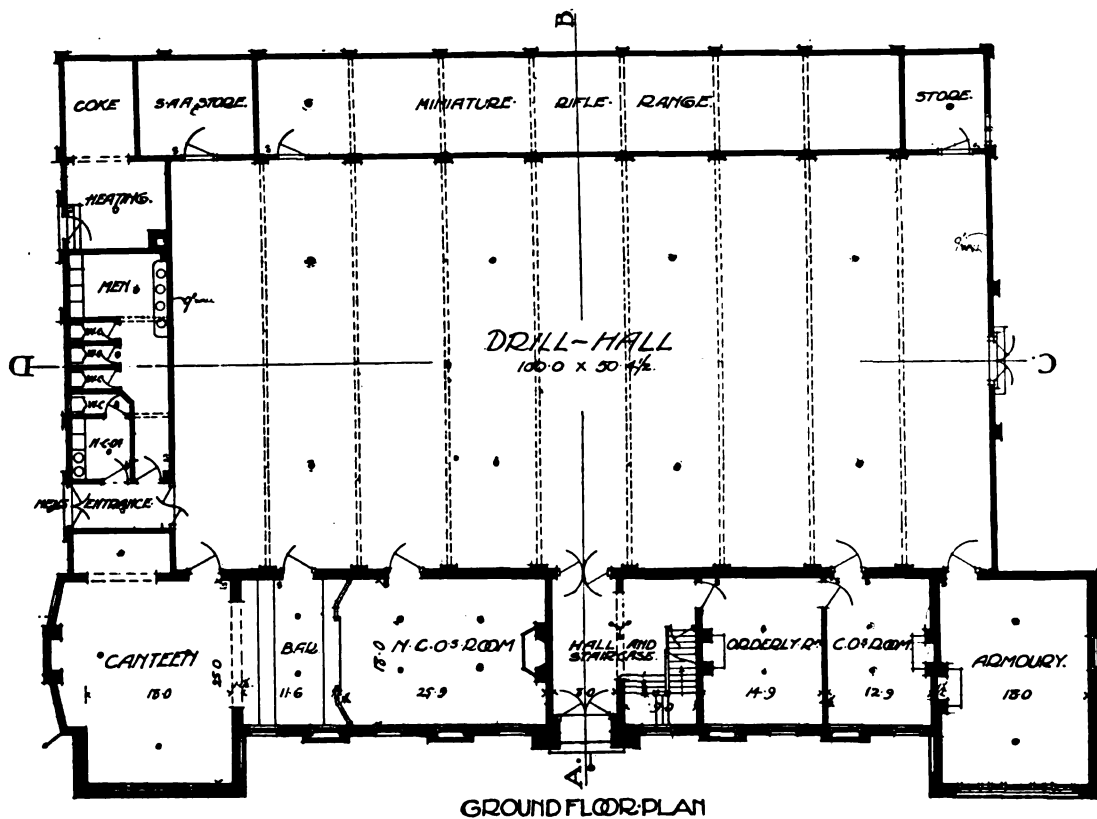
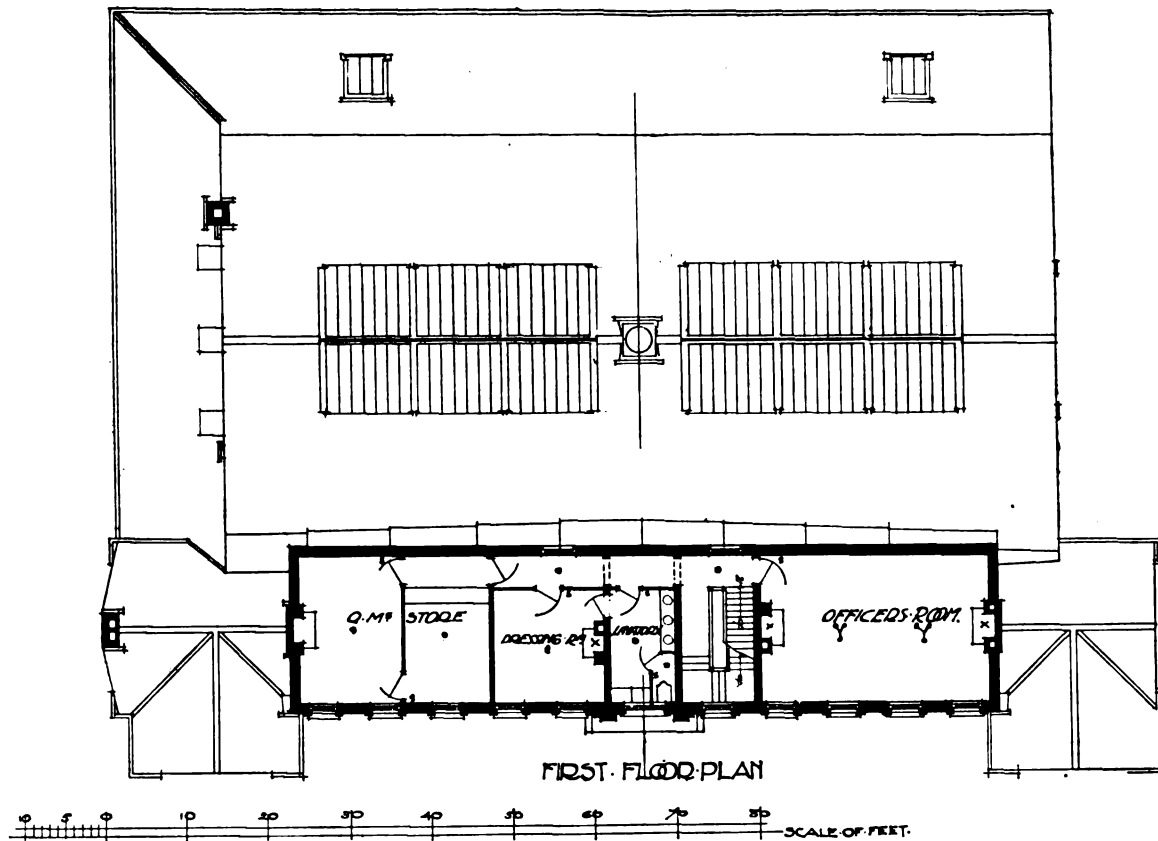
A very charming effect was obtained in "Munster Lodge" by the simple process of placing the doors directly opposite to one another, and glazing the top panels, thus giving a vista through the house in two ways, and a view of the garden beyond to a person entering.

The work was designed by Mr. A. Jessop Hardwick, F.R.I.B.A., and executed by Messrs. Gaze & Sons, of Kingston-on-Thames, the whole of the casements and leaded lights and other metal work being entrusted to Messrs. Humphries, Jackson & Ambler.

NEW TERRITORIAL DRILL HALL, POUND LANE, WILLESDEN.

The building is one of several new headquarters designed by Mr. S. W. Cranfield, A.R.I.B.A., architect to the Middlesex Territorial Association, in the Renaissance style

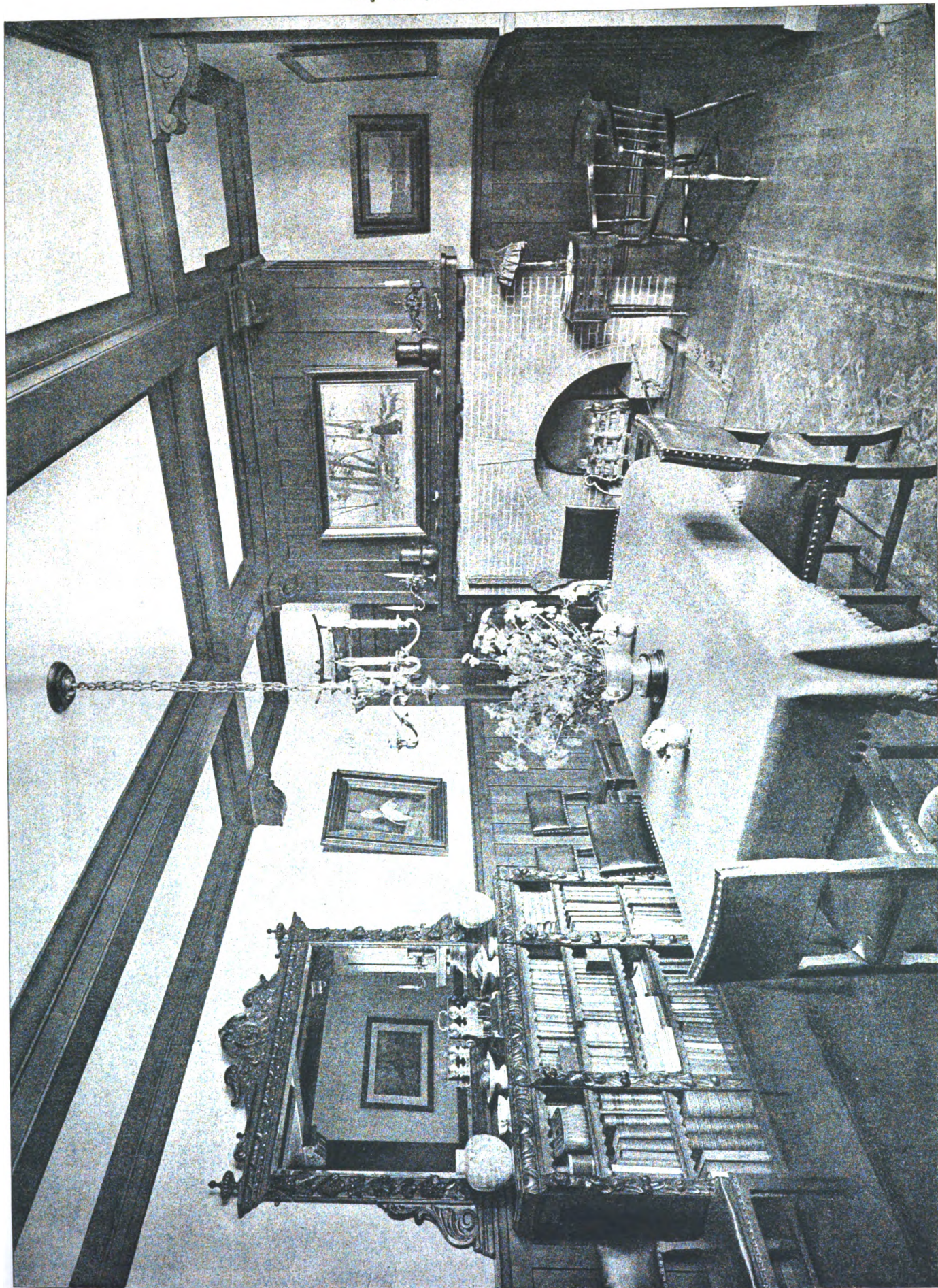
manding officer's room, orderly room, non-commissioned officers' room, men's recreation room, armoury, storage, small arm ammunition store, and a miniature rifle range. On the first floor are placed the officers' rooms, dressing-room and quartermaster's store; and on the top floor the sergeant-



NEW TERRITORIAL DRILL HALL, POUND LANE, WILLESDEN.

of architecture. Standing well back from the road, the principal entrance is placed in a central position, and low wings projecting at either side give a symmetrical appearance to the building. The accommodation provided comprises: On the ground floor, a drill hall, 100 feet by 50 feet, com-

major's quarters. The building is faced with red bricks and Portland stone, and stands well above the level of the ground. The contractor is Mr. James Stewart, of Tottenham. The steelwork is by Messrs. R. Moreland & Co., and the heating by Messrs. R. Crittall & Co.



"INK-PHOTO" SPRAGUE & CO. L^{td} 69 & 70, DEAN STREET, SOHO, W.

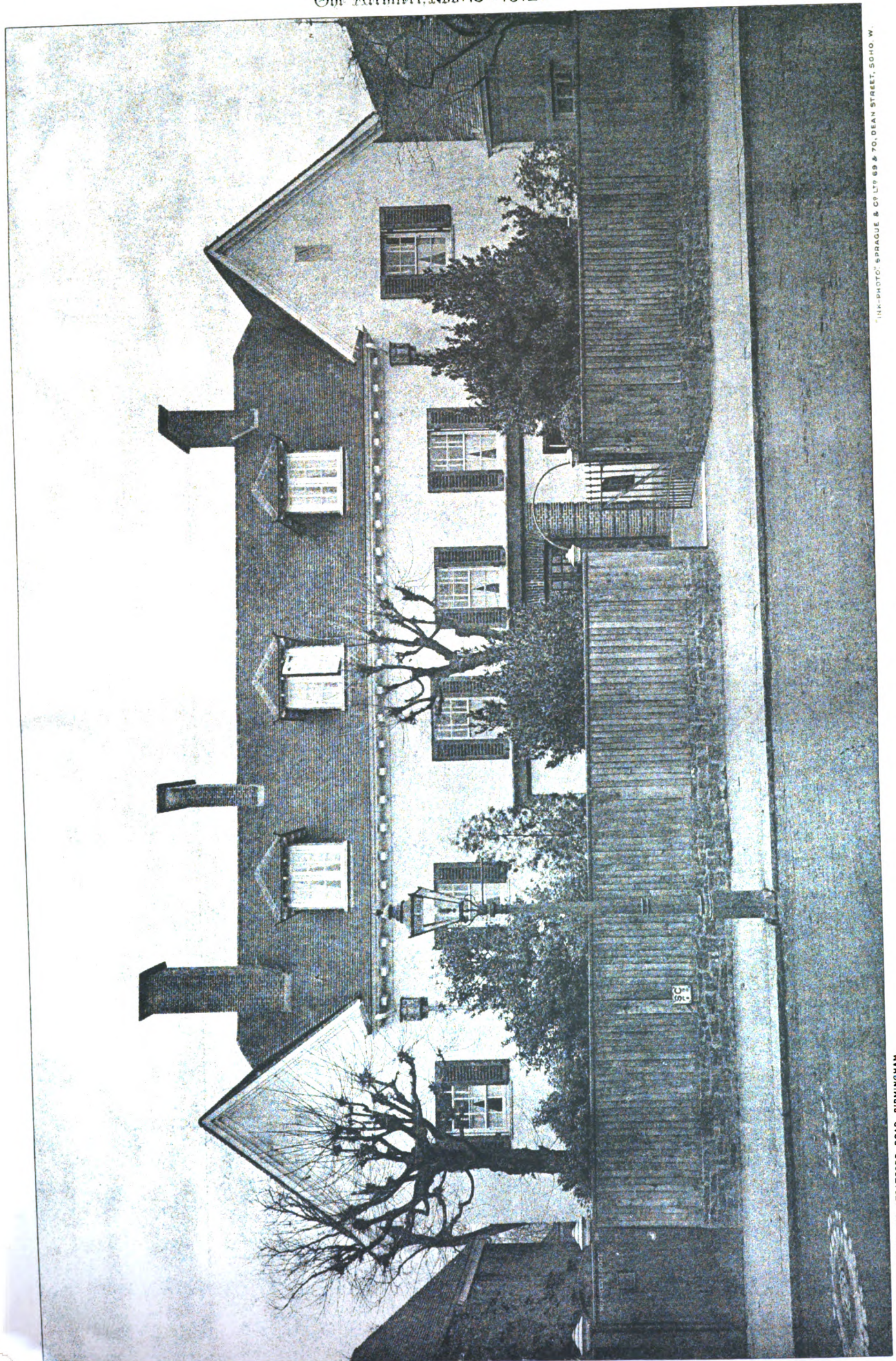
PHOTO BY T. LEWIS, 200 STRATFORD ROAD, BIRMINGHAM.

MUNSTER LODGE, TEDDINGTON: THE DINING ROOM.

MR. A. JESSOP HARDWICK, F.R.I.B.A., Architect.

THE PHOTO SPACIOUS & LIGHT ROOM

MR. A. JESBOP HARDWICK, M. S. A. Architect



"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

MUNSTER LODGE, TEDDINGTON: ENTRANCE FRONT.

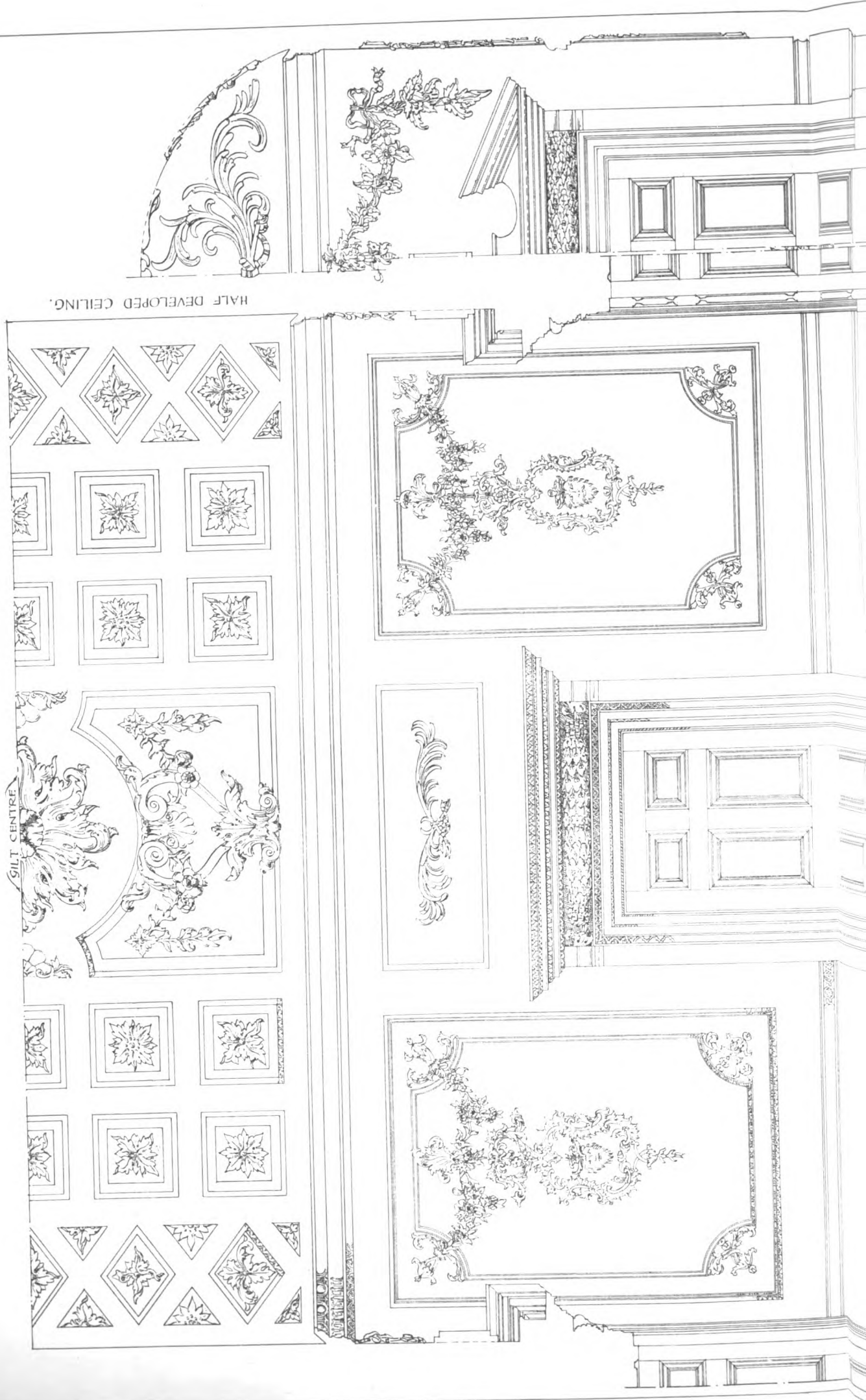
MR. A. JESSOP HARDWICK, F.R.I.B.A., Architect.

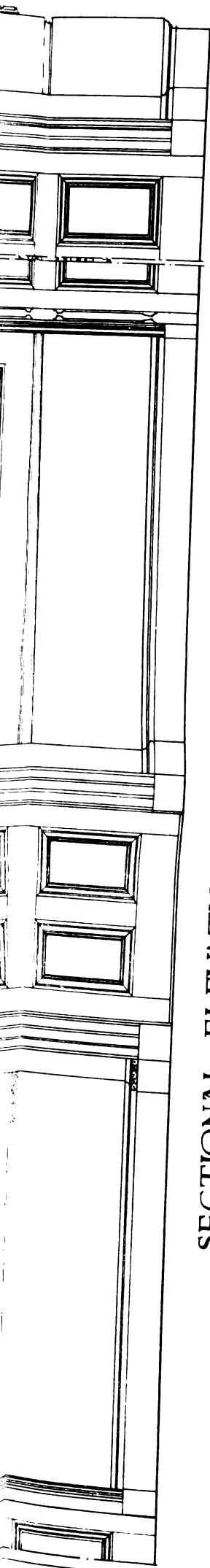
PHOTO BY T. LEWIS, 200 STRATFORD ROAD, BIRMINGHAM.

REPRODUCED FROM THE ORIGINAL DRAWING BY THE ARCHITECT

FRONT.

MR. A. JESSOP HARDWICK, F.R.I.B.A., ARCHITECT.

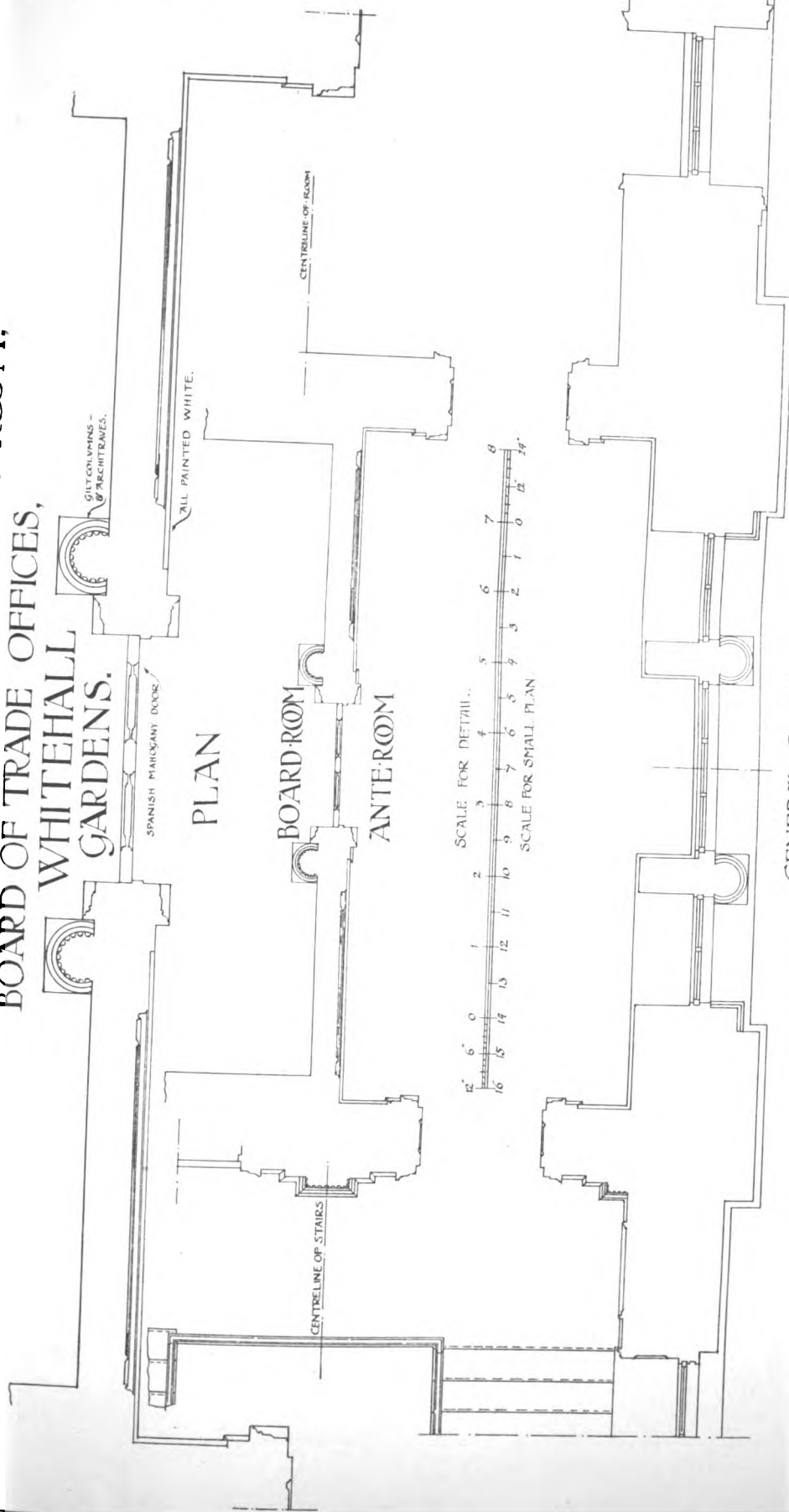




SECTIONAL ELEVATION OF ANTE-ROOM,
BOARD OF TRADE OFFICES,
WHITEHALL
GARDENS.

SIDE ELEVATION.

ORIGINALLY LORD
PEMBROKE'S HOVSE
SIR WM CHAMBERS -
SVCCEDED WM KENT
& CARRIED OVT IN 1760
THESE ALTERATIONS.



GENERAL PLAN.

MENS & DELT. OCTOBER 1912.
ALBERT E. BULLOCK ARCHT.

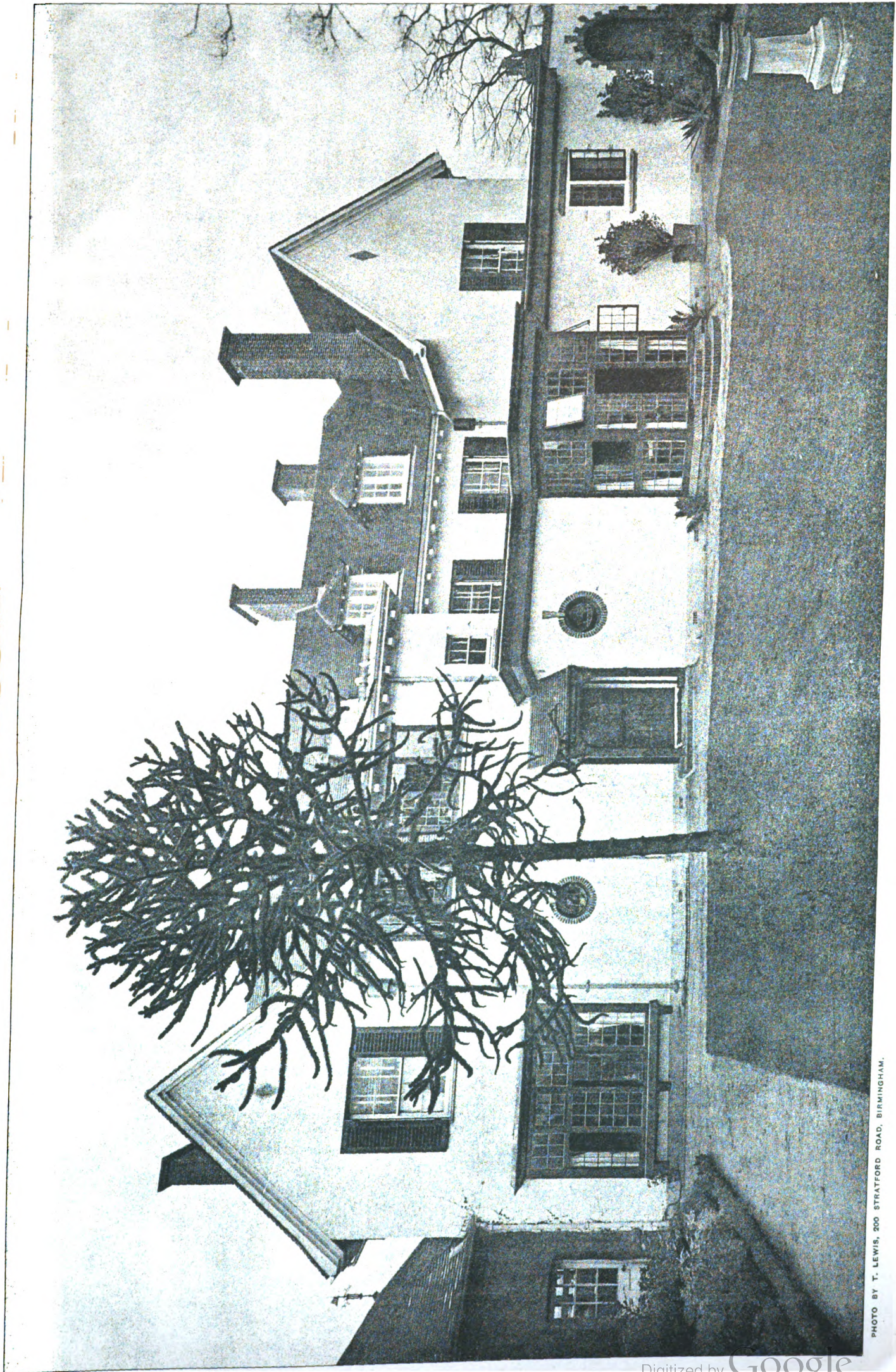
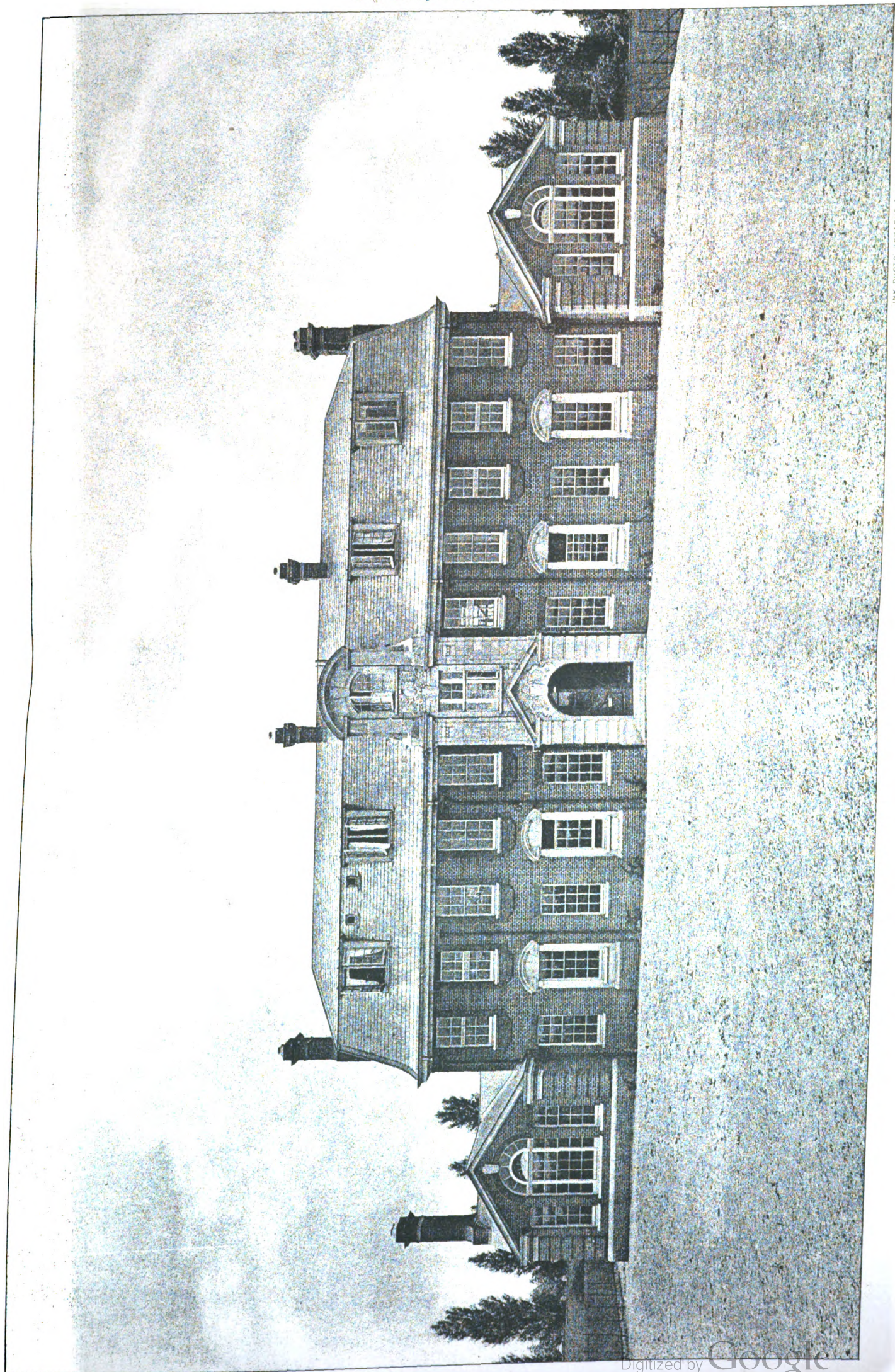


PHOTO BY T. LEWIS, 200 STRATFORD ROAD, BIRMINGHAM.

MUNSTER LODGE, TEDDINGTON: GARDEN FRONT.

MR. A. JESSOP HARDWICK, F.R.I.B.A., Architect.

INK PHOTO: SPRAGUE & CO. LTD 692, 70 DEAN STREET, SOHO, W.



NEW TERRITORIAL DRILL HALL, POUND LANE, WILLESDEN.
MR. SYDNEY W. CRANFIELD, A.R.I.B.A., ARCHITECT.

INK PHOTO. SPRAQUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

THE SOCIETY OF ARCHITECTS.

A MEETING of the Society of Architects was held at their premises, 28 Bedford Square, W.C., on Thursday, November 14, when the President, Mr. Percy B. Tubbs, F.R.I.B.A., delivered the following inaugural address:—

I wish to express my appreciation of the honour which the members have conferred upon me in unanimously electing me President of the Society, and my sense of the responsibility incurred by the holder of that office, the highest which it is in the power of the Society to confer upon any of its members. I also feel that my task will be rendered more difficult than usual in having to follow my predecessor Mr. Bond, who has rendered the Society such great service, particularly during the past four years that he has occupied the Presidential chair, but I realise to the full that I shall have the co-operation and assistance of the entire Council, and with their support and the help of the Society's capable and obliging permanent staff—who are always ready to afford one any assistance that lies in their power—I hope I shall be able to fulfil the office with some credit to myself and advantage to the Society.

It is customary for the President to present an address embodying his personal views on matters affecting the interest of the Society and the profession, but owing to the fact that there are in the United Kingdom some eighteen architectural societies and that each President has a similar duty to perform in the way of an address, there is necessarily some overlapping on professional matters, and the task of preparing an address is one of unusual difficulty.

The Annual Report of the Council, which has been for some time in the members' hands, deals with the growth and development of the Society in detail, and therefore I will only touch briefly upon one or two points in connection therewith.

It has been found advisable by the Council during the past year to revise the Articles of Association so as to provide machinery for the more effective administration of the Society's affairs as a corporate body, both now and in the future, and for extending its scope and sphere of utility.

The proposals for the reorganisation of the Society are already in the members' hands, and as no new principles are introduced it is confidently hoped that the Council's proposals will be confirmed.

EDUCATION AND ELIMINATION.

They include the introduction of a new class of students to be designated "graduate," who will be men who have been examined as to their artistic capabilities with a view of eliminating those who do not show sufficient artistic ability to become successful practising architects of the high standard that the future will demand. Nothing, perhaps, has done more in the past to lower the standard of architecture and to retard its progress than the entry into the profession of those who have not the instinct for architecture—it has been detrimental to all concerned.

The community has got commonplace building instead of architecture, and the profession has got discredit, while many very capable architects have been placed in a false position and those of special aptitude denied that real and permanent success they might have achieved in some other and to them more congenial profession.

This raises the question of architectural training generally, in regard to which a special Committee are already actively at work on the details of a scheme for the establishment of architectural ateliers in the United Kingdom on the lines of those which are so successfully carried on in Paris.

This Committee have already held several meetings, and I have no doubt will be able to come to a satisfactory conclusion in due course. I shall hope to see their report adopted and carried into effect without delay, so that before long ateliers may be established both in London and the large provincial towns. The Council, in taking a step so fraught with possibilities for good, hope for and confidently anticipate the cordial approval and co-operation of that large and ever-growing body of professional opinion, which is alive to its value and necessity. A question of such vital interest to the future of architecture does not concern this Society alone. The idea being to supplement the existing methods of training rather than to supplant them, it should receive the support of every Architectural Society. We therefore invite the whole-hearted and active co-operation of the Royal Institute of British Architects and its allied societies and of all other interested bodies, so that we may accomplish more quickly and more efficiently a reform which we are convinced is in any event bound to come in the near future.

Those who have studied the various methods of architectural training are of opinion that while there may be some faults or weaknesses in points of detail in the French system, yet it has proved in principle to be of the greatest possible advantage to the profession where it has been adopted. This is particularly the case in America, where, since the introduction of the Beaux-Arts system, the whole tone and standard of architectural design has been enormously raised within a comparatively short period.

In the United Kingdom there are a number of architects of great ability and eminence, and we may be said to possess a distinctive architectural style, particularly in domestic work, yet we are far behind other countries in the public appreciation of architecture as an art and in the standard of architectural design as applied generally.

PUBLIC RECOGNITION AND APPRECIATION OF ARCHITECTURE.

I think we may venture to believe without undue optimism that we are fast approaching a time when architecture will at last come into her own again, and resume that place in the public estimation which is her due, and which she already enjoys in more favoured countries. On all sides we see indications of an increasing public interest in the greatest of the fine arts.

Parliament has recently for the first time in this country, so far as I am aware, taken architecture seriously, and during the debate on the proposed St. Paul's Bridge laid down the principle that no public improvement should be carried out without due consideration being given to the architectural aspect or without consulting those qualified by nature and training to advise. Then the Town Planning Act (again for the first time in this country) has officially recognised the value of architectural beauty and has given it the sanction and authority of an Act of Parliament, and the art of architecture is recognised and protected to some extent by the recent Copyright Act. These are what I believe to be signs of the times, signs that may be noticed with increasing frequency both in the Press and in ordinary daily intercourse.

It is for us to rise to the occasion, and if we expect recognition as artists we must be artists, and well trained ones too. Unfortunately, however, it has long been felt by those who have given much thought to the training of architects that our present system is far from satisfactory and not adapted to produce the trained artist. Since the breakdown of the pupilage system, which was so scandalously exploited by a previous generation, great progress has undoubtedly been made in building up architectural schools to replace it. We have done the best we could, but, hampered as we have been by our own haphazard upbringing and by our own lack of theoretical and systematic training, it was not to be expected that we could know all at once how best to organise a perfect system of architectural education or be in a position to impart a theoretical training which we ourselves had not received.

It is generally conceded, I believe, that, however well our schools may teach the various branches of knowledge with which an architect should be acquainted, they are not so successful in teaching the student the one thing needful, viz. how to apply this knowledge. They may teach everything connected with architecture, except the art of architecture itself, the art of design. I believe I am right in saying that the most enlightened opinion of the day realises how far we are in this respect below the Continental schools, more particularly those of Paris, to which so many architectural students are going every year owing to the lack of facilities in their own country.

The Society of Architects has always striven in the cause of architectural education, and the Council are of opinion that the time has arrived to make a determined effort to lift our educational system to the level of that obtaining on the Continent.

This is no light undertaking, and it cannot be brought about all at once, but your Council believes that an important step towards this end may be achieved by their proposal to bring within the reach of all concerned those educational facilities which have been responsible for producing most of the best architects of the day, both in Europe and America.

REGISTRATION OF ARCHITECTS.

The Statutory Education and Registration of Architects is a question which the Society has made its own and with which it has been identified for upwards of twenty-eight years, and in order to achieve the result which we all have so much at heart negotiations were entered into with the Council of the Royal Institute of British Architects more than two years ago. The negotiations were primarily on

the registration question only, but the proposals of the Royal Institute Council differed so essentially in principle from those of the Society that we could not accept them, and the only way out of the difficulty, so far as the Institute was concerned, was to make provision for the members of the Society to join the Institute so that in any Registration Bill put forward by the Institute their interests would be protected. In other words, the proposed fusion was to the Society merely a means to an end, and that end was registration.

The Society have always stated that if the Royal Institute will produce a Registration Bill with which they can agree they will step aside and let the Institute lead, and the Council of the Society kept their word by accepting the proposals of the Council of the Royal Institute. As you all know, the proposals were submitted to the members of the Institute in general meeting, but after a lengthy and somewhat heated discussion the whole matter was referred back to their Council for further consideration, and they have been considering it in Committee ever since. This action was taken by the members of the Institute more because the proposal was complicated by the introduction into the proposed agreement between the two bodies, of all sorts of provisions, including the heads of a Registration Bill, than because the principle of the scheme was objected to.

Until the Committee's report is issued it is not possible for the Council of the Institute to make any official statement to this Society, but the negotiations have not been broken off, which is a great advantage, as it is always possible that the two bodies may meet again and resume their deliberations. Unfortunately, we are not in a position to guarantee that the negotiations will be renewed, and in the meantime the work of the Society on behalf of registration has been held up for two years, and if we are to await the result of the deliberations of the Committee of the Institute before taking any action the whole question may be retarded for an indefinite period.

We feel that the more delay there is in introducing a Registration Bill into Parliament the less chance there is of its becoming an Act, consequently it would be unwise in the interest of our members to further delay the matter pending a final report from the Institute. Registration is of such vital importance that it cannot be left in abeyance indefinitely, and under these circumstances we feel it a duty to the members to introduce the Society's Bill into Parliament at the earliest possible moment, and we hope that it will be presented during the present Session.

We do not yet know what attitude the Royal Institute of British Architects will adopt in this event, but we do know that the present Council, and the Institute as a corporate body, are pledged to registration, and further, seeing that the R.I.B.A. Council was returned last June for the express purpose of carrying the registration movement a step further, I do not see how they can consistently oppose the Society's measure, or what they can gain by doing so.

I am glad to say that a better feeling undoubtedly exists between the Society and the R.I.B.A. than ever before, and if full advantage is taken of this on both sides great progress may be expected in the near future, not only with regard to registration, but in connection with other necessary reforms that are urgently needed in the profession.

OFFICIAL ARCHITECTURE.

The question of official architects is one which most seriously affects the future of our profession. Just when a generation of able men has arisen who have devoted their lives to the study of the more monumental aspect of architecture, we find the growth of a system which threatens to deprive them of their livelihood and of any opportunity of placing their special attainments at the disposal of the community.

But, although the growth of the practice of employing official architects deprives the independent and specially trained men of the bulk of the public work, it is necessary to endeavour to approach the subject from the broadest possible point of view, in the interest of the public and the advancement of architecture, for, after all, architects exist for the good of the community.

I think that the present system only exists because the public is misinformed, and it will only continue to exist just as long as the indifference and ignorance of the public lasts.

The public has a right to the services of the best talent in the country, but under the present system it does not get it, although it may be under the impression that it does.

There can be no doubt that every building erected by public authorities should be designed by the one man in

the country who is best able to solve the particular problem involved. The system of employing the official architect does not insure this, and the public interest suffers in consequence. Instead of securing the best available architect by public or limited competition or otherwise, we find Corporations and Government departments entrusting important buildings, requiring special skill in design, to the officials who were appointed to their positions for qualities of an entirely different character, such as administrative ability or because of their special qualifications as surveyors.

The public does not seem able to discriminate between knowledge and skill, the knowledge of the requirements of a building or of a public department, which other than architects may acquire, as distinct from the trained skill of the designer in the use of that knowledge when acquired, which no one but an architect can possess.

The public does not realise that the arguments which apply to the appointment of surveyors and medical officers of health do not apply to the appointment of architects. One never hears of a medical officer of health being called upon to perform a serious abdominal operation on a Lord Mayor; he calls in a specially trained man to do it, but we do hear only too often of an official architect being called upon to design a building requiring special knowledge and skill, and it seems to me that a life of official routine faithfully performed does not foster the development of the imaginative faculties or make for the high standard of skill in design, obtained only by long years of practice which all our public buildings should show. Neither does the public realise, as it ought to be made to realise, that the ablest designers we possess do not and will not hold official positions under present conditions, and that when a public body advertises for an official architect the very men to whom the public work should be entrusted refuse to apply for the post.

Figures have lately been produced to prove that it is as economical to employ officials as to employ independent architects, but even if this is true the value of the article obtained is not the same. The lower standard of design produced by officials compared with what might be produced by the very best of our designers destroys the value of the comparison.

If the conditions of official service were so revolutionised as to tempt the most gifted designers to sacrifice their independence and produce the best possible architecture in their capacity as officials, the cost of official architecture would be far in excess of what it is at present, and far in excess of what it would cost to employ the same man as an independent architect, under conditions that entail no sacrifice on their part.

It appears to me that there is a certain obligation resting on the President of such a Society as this to place these facts before the public without fear or favour, for after all the public suffer most by the present system, and it must be clear that if the present tendency increases till all the public work is done by officials the ablest men, finding no opportunity in this direction, will no longer devote their attention to public work, but will concentrate on private work, and the standard of public buildings will be permanently fixed at that level of respectable mediocrity that is now characteristic of nearly all the official architecture in the country. I venture to think that when the public realise that they get better work for less money by employing an independent architect they will not hesitate to demand an alteration in the present system, and will not be content till they get it.

It must not be supposed, however, that an architectural department for routine and advisory work is not capable of doing good public service; on the contrary, I think it almost indispensable, but it should not be employed in original creative works of architecture. Many of our public authorities maintain a staff of assistants of a high standard of knowledge and experience who are intimately acquainted with the practical requirements of every class of public building, and if this knowledge and experience could be placed at the disposal of the most brilliant creative designer obtainable, when any original work was contemplated, the result would be a blending of the practical with the artistic and the production of a well designed and thoroughly satisfactory public building.

THE R.I.B.A. AND THE SOCIETY.

With regard to the future of the two societies which represent the profession of architecture, there is a point I should like to bring forward which I venture to think is worthy of the most earnest consideration of the R.I.B.A. and of this Society, as they each have the same object in

view, viz. the advancement of architecture and the protection of the rights and privileges of architects. As at present constituted and administered, there is of necessity a certain amount of overlapping and clashing of interests which is much to be regretted.

The Institute has a Royal Charter which was granted "for the general advancement of civil architecture and for promoting and facilitating the acquirement of knowledge of the various arts and sciences connected therewith, it being an art esteemed and encouraged in all enlightened nations as tending greatly to promote the domestic conveniences of citizens and the public improvement and embellishment of towns and cities."

One gathers that the Council of the Institute is very much overworked. This sometimes involves considerable delay in dealing with important points that are constantly arising, many of which are perhaps not directly connected with civil architecture or the various arts and sciences connected therewith, but have more to do with the business side of the profession.

Now, in the medical profession there are the Royal Colleges of Physicians and Surgeons, and there is the Medical Association, and what seems to happen in this case is that matters of real business interest and things affecting the pecuniary interests of the members of the profession are left to the latter body to deal with, while the Royal Colleges confine their attention to examinations and ethics, and to upholding generally a high standard of medicine and surgery. Why should not architects work on somewhat similar lines? The R.I.B.A. might be the sole examining body and be responsible for a standard of ethics. Relieved of routine work of a business nature, which now appears to cripple its energies, it would be free to devote all its time to the duties imposed upon it by its Charter and to work for the advancement of architecture as the mistress art, regardless of all other considerations. It would find more time to consider new ideas, to discuss and formulate schemes for the future progress of our art and to give the lead in the artistic, scientific, and ethical aspects of our work, of which we always stand in need. Freed from considerations of expediency or suspicion of personal interest it would speak with greater authority, would take an even higher place in public estimation than that which it now rightly holds, and be a Society to which it would be still greater honour to belong. But no art can flourish unless those who practise it can live by it in decency and comfort and receive that consideration from the public which the value of their work deserves. The Society, by giving its undivided attention to studying the welfare and the business interests of all members of the profession, would be doing a work of paramount importance equally necessary to the advancement of architecture, even if less ornamental than that performed by the Institute. It would then be still more to the interests of every practising architect to join the Society.

Apart from the mere increase in the number of practising architects, the increasing complexity of our civilisation entails upon a profession such as ours, which touches life at all points, an ever-increasing number of problems that call for solution, our interests from day to day become more varied, our responsibilities more vast. But although one Society, if properly organised to that end, might be capable of dealing with every aspect of our responsibilities and interests, I think it would be a distinct advantage to have two societies in London working in perfect harmony, each supplementing the other, each with its clearly defined duties and sphere of influence. I am of opinion that if some such arrangement as this could be agreed upon by the R.I.B.A. and this Society it would be a great advantage to the profession and to architecture as a fine art. There should be no real difficulty in determining the functions of each body; they would naturally fall under the two headings of architecture and architects.

DEVELOPMENT OF THE SOCIETY.

Returning to questions affecting the interests of the Society, there are many ways in which members can co-operate with the Council in developing and extending its work and influence.

The Society's examinations are being extended and the syllabus revised, and very shortly new conditions will come into force and the scope of the examination will be considerably widened by the introduction of the "Graduate" class to which I have already referred. However perfect a system of education may be, it requires the right material to work upon. The examination for the graduateship class therefore will be directed to the selection of suitable mate-

rial and to the rejection of the unsuitable. Coming as it will at the very beginning of the students' career, it will save them from wasting further time and permit them to turn their attention before it is too late to some other occupation in which they will find fuller scope and more adequate reward for their energies.

This examination will also be a good test of the student's general knowledge and his ability in writing essays, which will have to be amply illustrated by sketches and perspective drawings. He will also be required to have a very sound elementary knowledge of the orders and styles of architecture, which he will have to demonstrate to the examiners by preparing drawings and details under supervision, and also by submitting testimonies of study.

If the student has not the necessary qualifications he will be relegated to his studies, and unless he is able to pass the examination by the time he is twenty-five years of age he will be advised to turn his attention to some other calling.

Personally, I think the sooner this happens the better, and that the age limit of twenty-five is too high, in which case it may be found good policy in the very near future to reduce this considerably. I think myself twenty-two would be a more suitable age, but neither arrangement would debar anyone wishing to become a graduate from passing the examination at any age that he cares to sit for it, and it will, I think, be a good guide to the student or his parents or guardians if he sits for the examination and fails and is no longer able to call himself a student of the Society. It is hoped this will have the eliminating effect we desire. The profession is already too full of unsuitable half-trained men. If we can stop this in the future and get a Registration Bill passed as well, the profession will be in a far better state than it has ever been before.

The Building Fund is one of the matters which has been in abeyance owing to the uncertainty of the negotiations with the Royal Institute, but it is thought desirable that the attention of members should be again directed to this matter, and I think that if those members who have not already contributed would do so to the extent which circumstances permit we should soon be able to clear off the debt on the building, which now stands at about £1,000, and provide the nucleus of a fund for the completion of a building scheme. I suggest that as the annual subscriptions are now being paid, members might take an opportunity of, say, doubling their contribution for once, in which case the object would be attained.

Owing, no doubt, to the fact that a very large number of our members are resident in the provinces, the meetings of the Society in London are, in common with other similar meetings, not so well attended as they might be, and I think serious efforts should be made to ensure a better attendance. It is not always easy to arrange for suitable and interesting papers, so the Council would be very glad to receive offers of papers from members or suggestions for making the meetings more popular with members and generally useful to all those interested in our proceedings. If any members have suggestions to make that would tend to make the meetings more attractive, and will be good enough to communicate with the Secretary, they shall have the most careful consideration. Writing a paper is by no means an easy task, and it is a poor compliment to the author who has taken an infinite amount of trouble to prepare one, if when he comes to read it his audience is but small. The Society has purchased a new lantern fitted with a powerful arc lamp and possesses a screen for the display of the pictures which is as good as it is possible to get, and now that we have every facility for getting the best possible results from slides, I hope that members will come forward and read papers and illustrate them, knowing that everything is at their disposal to do their illustrations justice.

PROFESSIONAL DEFENCE.

A very important extension of the work of the Society is the formation of an Advisory Committee to deal with questions arising out of professional practice.

A considerable sum has been set aside to enable this Committee to practically and financially assist members in any litigation or negotiation which involve questions of principle affecting not only their own interests, but those of the profession generally. The fund, which is ample for present needs, is only a nucleus, and it is the intention of the Council to add to it as may be necessary, so as ultimately to be in a position to fight any case which, in the opinion of the Council, acting on the advice of this Committee, is of sufficient importance to the profession as a whole.

This is not, I believe, the first professional Defence Committee to be formed, but it is the first to be provided with a fund to enable it to take action.

As this Committee is constituted, we have the assistance of very capable legal men and competent and influential men of affairs, and by consulting this Committee we shall have the advantage of the advice and opinion not only from the legal but from the professional and practical point of view also.

We cannot help feeling that this Committee will be able to do some valuable work in the interest of the whole profession.

ARCHITECTURAL COMPETITIONS.

The remedy for unsatisfactory competition conditions rests very largely with the profession itself. The promoting bodies do not always purposely err, but are sometimes in ignorance of the existence of the conditions which the profession consider should be laid down for competitions. Something might be done by having a statement issued in the first place to every local authority in the kingdom, and from time to time to other promoters of competitions, giving the general lines on which it is suggested a competition should be conducted, and making it clear that if these lines are departed from architects who are members of Architectural Societies will refrain from competing. This circular should be signed by the responsible officials of every Architectural Society in the kingdom. I also feel that an advertisement inserted each week in the professional journals making it clear to all promoters of architectural competitions that the conditions have to be approved by the Society before any of their members will compete, and suggesting that the conditions governing the competitions should be drawn up to agree with the printed particulars issued by the Society and the R.I.B.A., would very soon educate the promoters up to a proper standard, and the competitions of the future would be much more satisfactory. Much could also be done if the Competitions Committee of the Royal Institute, for example, were to give notice of any objectionable conditions to every Architectural Society, so that all might act in unison.

Some architects hold the view that in the case of limited or local competitions if the invited competitors or the architects within the defined area are agreeable to the conditions laid down, whatever they were, such competition should not be barred by Architectural Societies, but I personally feel that all competitions should be conducted on recognised lines and that there should be no exception to the rule.

ARCHITECTS' BENEVOLENT SOCIETY.

The Benevolent Society does an immense amount of good, and is capable of doing a great deal more, but is hampered by the want of funds. Every member of the profession should, I think, feel under an obligation to give either a donation or an annual subscription, and thus know that he is doing something, however small, to help his less fortunate professional brethren. The Council of this Society has recently doubled its annual subscription, besides giving a donation, and I hope that during the coming year the Finance Committee will be able to recommend doubling the subscription again.

NATIONAL INSURANCE ACT.

As will have been seen from the Annual Report the Society is co-operating with the R.I.B.A., the A.A., and the Surveyors' Institution in the formation of an approved society under the Act for architects' and surveyors' assistants. The idea is a good one, and it is to be hoped that it will meet with the general support of the architects' and surveyors' assistants, who are compelled to insure under the Act.

A Committee has been formed, and considerable progress has already been made. It is felt that architects' and surveyors' assistants are particularly good lives and as a class run very small risks. In addition to this, they very soon earn more than £160 per annum and cease to be insured under the Act. It is considered that under these circumstances the Society should very soon be most prosperous and in a position to distribute increased benefits beyond those prescribed by the Act. It is, therefore to be hoped that it will meet with universal support, and that architects and surveyors in practice will subscribe their 10s. 6d. per annum and become honorary members and so help to establish a fund which will be used later on, when circumstances permit, to establish a sound benefit institution apart from the National Insurance Scheme.

THE UNATTACHED ARCHITECT.

A great deal of interest has been shown in the proposal of the Society to publish a code of ethics for the guidance of members, but the main difficulty has been that of dealing with the unattached architect. The ideal arrangement would be a Board of Professional Control for the whole profession, but this could only be effectively constituted under a Registration Act. It remains in the meantime for the various societies to insist on a high standard of professional morals and conduct on lines somewhat similar to the Society's proposals.

Whilst on the question of the unattached architect, I should like to point out that the ranks of the R.I.B.A. in any class are now closed to candidates other than those who have passed the Associateship Examination, but there are still very many qualified architects in practice who are unattached and are consequently "free lances," and this seems to me to be a disadvantage to the profession, which would be the stronger for their co-operation, and I think it should be the aim of this Society to do all in its power to enrol such of these gentlemen as are eligible and qualified in our ranks as members.

It must not be forgotten that if a Registration Act was passed it would, no doubt, recognise all vested interests and consequently all *bona fide* qualified architects would be entitled to register, and we, by adopting the policy I have outlined, would only be anticipating what would be compulsory when the Act became operative.

The R.I.B.A. have succeeded in getting some 2,000 architects to become Licentiates, but numbers of these appear to have joined under the misapprehension that it would be quite easy, in fact more or less a matter of form, for them to become Fellows of the Institute. As a matter of fact, only ten have been able to satisfy the examiners and qualify as candidates for election as Fellows at the first examination which has been held. This examination proved not to be a mere matter of form, but a very real test extending over six days. How Licentiates feel about this I do not know, but possibly some or even many of them would rather be corporate members of a progressive and thoroughly up-to-date Society, making for reform all the time, than merely non-corporate members of the senior body. I for one shall watch future developments in this respect with great interest.

BRANCHES OF THE SOCIETY.

The South African Branch of the Society, which has been established for six years, has proved to be of the greatest benefit to the Society and to the profession in that part of the Empire, and the fact that the membership in South Africa is increasing at a satisfactory rate shows that the argument that the Society cannot appeal to architects at a distance is without foundation.

The passing of the Transvaal Architects' Registration Act was largely due to the energy and initiative of the branch, backed by the financial support of the parent Society, and further efforts are now being made by the branch towards extending the Act to the Union of South Africa, in which we shall again heartily and practically support them.

I hope that it may presently be possible to form other branches in various parts of the Empire with a view to extending the utility of the Society and working towards that unity in professional matters which is so much to be desired.

SOME ADVANTAGES OF MEMBERSHIP.

Although we have very considerably increased our numbers during the past year and have now a total membership of over 1,200, we are not progressing in this respect as fast as could be desired. There is no reason why the membership should not easily be doubled if members would co-operate in nominating duly qualified architects to membership.

The Society can offer many attractions to its members. It has a comfortable and well situated home, and a useful loan library which is being constantly added to and which is found to be of the greatest advantage, particularly to country members.

It has drawn up a code of ethics for the guidance of its members, and has a professional Defence Committee with a fund to fight cases for members and generally to protect their interests.

It is the first to make an attempt by the introduction of the graduate class to raise the standard of the profession by the elimination of those without the proper personal qualifications at the very beginning of their careers as

students, and it is taking the lead in introducing into this country the Beaux-Arts atelier system for the study of architecture.

The *Journal* of the Society forms a most useful link between the members, particularly those in the country, and might be more frequently used as a means of intercommunication than is the case at present. It contains a great deal of useful information in addition to the proceedings of the Society, and the Council are always glad to receive suggestions for its improvement.

The Students' Section offers many privileges and advantages which can be shared by country students equally with those in London, particularly those connected with the examinations, competitions, scholarships, the use of the loan library, and the receipt of the Society's publications, any one of which is more than worth the small annual subscription which, as a matter of fact, hardly covers the expenses incurred in issuing the *Journal* and other literature. If members would make a point of enrolling their pupils and assistants as students or as candidates for the graduateship or membership examinations it would greatly strengthen the Society as well as benefit the candidates concerned.

FRENCH RENAISSANCE ARCHITECTURE.—V.

THE fourth of the ten lectures on French Renaissance architecture, now being delivered by Mr. W. H. Ward, M.A., A.R.I.B.A., at University College, Gower Street, W.C., had carried the subject down to the period of the Wars of Religion. In his fifth lecture he dealt with "The Styles of Henry IV. and Louis XIII.—Utilitarian Architecture and the Barocco Influence."

In 1588 Henry III., the last of the Valois, was assassinated. There followed several years of hard fighting between the Huguenots and the Catholics before his Protestant cousin, Henry of Bourbon, King of Navarre, was finally recognised. Henry IV. was a strong ruler, eager for the establishment of order and the centralisation of all effective power in the monarchy. In letters and art the Roman qualities of majesty and power, order and law came to be valued above the Hellenic ones of subtle proportion and refinement. The growing tendency to subordinate the part to the whole, beauty of ornament and detail to the total effect of a composition, became accentuated. The seventeenth century was an age of prose rather than of poetry. Art was with Henry IV. less a gratification of the sovereign's personal taste (as it had been for the Valois) as of the administration of an element in the re-established national welfare.

Architecturally, explained Mr. Ward, the reigns of Henry IV. and of his son Louis XIII., which extend from 1589 to 1643, might be treated as a single period. He summed up the salient characteristics as being a broad, masculine sobriety, a bold scale and simplicity in composition, massive solidity inclining to heaviness, little and coarse ornament, slight use of the orders, but considerable use of rustication, especially in combination with brickwork, finally a predilection for curved forms in the way of roofs. This architecture as usual reflects the broad characteristics of the life of its age.

The buildings of this period are as a whole remarkable for their absence of decoration. Such of it as was employed is bold in scale and coarse and grotesque in character. It may be traced to the school of free Classic design initiated by Michel Angelo, which had developed during the sixteenth century in Rome and elsewhere into the so-called Barocco style. In its early forms it had been introduced into France by Il Rosso, Primaticcio, and their assistants. About the same time it also passed into the Spanish Netherlands, where it grew fat and fleshy, qualities which reacted on French decoration in the early seventeenth century.

There were other aspects which Mr. Ward placed side by side with these to give a proper understanding of the origins of the architecture of Louis XIV. One was the persistence of a thin vein of purer, more refined tradition of detailing and decoration; a second was a development in internal planning called forth by novel social requirements, a third the revival of Classical study among architects, and a fourth the growth after a period of depletion in the ranks of the profession of a line of great architects who, while working to some extent in the prevailing manner, gradually eliminated its coarser features and evolved a type of architectural treatment worthier of the great beginning of the mid-sixteenth century.

Up to the time of Maria de Medici's regency, that is until the death of Henry IV. in 1610, anything like coherence in internal planning was conspicuous by its absence. The apartments in the greater houses consisted of several large halls, used indifferently for any purpose, and a series of small private suites with little intercommunication except by external galleries and staircases, while the position of the unglazed main stairs in the centre of each wing prevented anything in the nature of a suite of apartments. Towards the end of Henry IV.'s reign new social habits brought about a new type of plan, the invention of which is credited to Madame de Rambouillet. This cultivated lady held in her hotel near the Louvre receptions where men of letters and art rubbed shoulders with the nobility. These receptions called for an uninterrupted suite of drawing-rooms, each of moderate dimensions, so as to accommodate comfortably a small group of persons yet easily accessible to each other, and at the same time well lighted and with a pleasant outlook. The plan of the Hôtel de Liancourt, designed by Salomon de Brosse and begun in 1614, is a good example of the manner in which these requirements were met.

In conclusion, Mr. Ward rapidly dealt with the prominent architects of the period, such as De Brosse, Le Mercier, and Mansart.

THE ROYAL SANITARY INSTITUTE.

A MEETING of the Royal Sanitary Institute was held at 90 Buckingham Palace Road, S.W., on Tuesday, the 12th inst., when Mr. H. Percy Boulnois, M.Inst.C.E., Chairman of the Council of the Institute, opened a discussion on "The Report of the Departmental Committee of the Local Government Board on Intercepting Traps in House Drains."

The controversy with regard to the question of intercepting traps, said Mr. Boulnois, is not new. At a sessional meeting of the Royal Sanitary Institute, held in London in 1906, Dr. Butler, medical officer of health of Willesden, read a paper entitled "Is the Intercepting Trap a Failure?" and Mr. Read, the city surveyor of Gloucester, followed with a short paper on the same lines. Both these gentlemen condemned the trap as a failure to secure isolation from the sewer.

Dr. Butler evidently did not let the matter rest, for in 1908 the Willesden Urban District Council approached the Local Government Board with a proposal to adopt a series of building by-laws, in which the requirement as to the provision of an intercepting trap was to be omitted. The Local Board refused, but promised that an inquiry into the question should be made.

A Departmental Committee was formed, investigations and inquiries proceeded, and after four years' work the report of this committee has been published.

The report practically condemns the intercepting trap. Our long-cherished belief in the efficacy of the trap has been rudely shaken, and it behoves us to very seriously consider this report and the conclusions at which the committee have arrived. For at least thirty years the Local Government Board have insisted on the provision of an intercepting trap and proper air circulation in all by-laws relating to house drainage; and it will be interesting to see what line will now be taken by the Board in view of this report from a committee of their own officials.

The members of the committee are all highly experienced in their respective professions. The report bears evidence of the extreme care and labour with which the investigations were made, and the manner in which the conclusions were arrived at.

Various indictments are raised in the report against the use of the intercepting trap. The conclusions at which the Committee have arrived in each case may thus be dealt with:—

No. 1.—That as the trap forms an obstacle to the passage of sewer air through the house drain, its use renders the ventilation of sewers more difficult and costly.

This contention raises the whole question of the ventilation of sewers, on which much time has often been spent, and many papers written and discussed. We are all of us acquainted with the difficulties which surround this subject, and the committee have evidently been thoroughly aware of these difficulties, with which they deal at some length, and it is interesting to observe that on page 41, paragraph 119, they state:—

"Too much importance has been attached to the question of sewer ventilation, for there is a considerable amount

of evidence which indicates that the necessity for ventilation of sewers has been exaggerated."

In connection with this, Mr. Boulnois pointed out that at the Sanitary Congress at Dublin in 1884 he read a paper called "Isolation versus Ventilation," in which he endeavoured to point out that the practice of openings in the streets for the so-called purpose of ventilation of sewers then in vogue was unsatisfactory and unnecessary, and that it was more important to isolate the house "by means of simple and effective traps" than to make these openings in the sewers, and that all that was needed, if this were done, was to erect a few "relief pressure shafts" at proper positions on the sewer.

A chronological list was given of different methods suggested or tried for the purpose of ventilating sewers from the year 1840 to 1884, and it is interesting to note that in regard to the year 1882:—

"Mr. Read, the surveyor of Gloucester, suggested that all house drains should be used as upcast shafts to ventilate the sewers, for he argued that as the sewer was used for the benefit of owners of house property, so should they contribute to the ventilation."

Which shows that even twenty-eight years ago the question of the advantage of the intercepting trap was doubted.

The Departmental Committee's report goes very fully into this question of ventilation of sewers, and arrives at the following conclusion:—

"If, therefore, the objection to the intercepting trap rested solely or mainly on its interference with sewer ventilation, we should be inclined to question the importance of such an objection."

Mr. Boulnois said he personally agreed with this conclusion, though no doubt the advocates for the abolition of the trap may have many arguments in favour of the free ventilation of sewers through the house drains as being the solution of the problem.

It is contended by many persons, and the report also deals with the question, that the presence of the trap in the house drain containing sewage, often in a state of decomposition, largely contributes to the formation of gases and offensive smells in the sewer, and there is some considerable weight in this contention if it can be shown that a house drain, without an intercepting trap, would never contain decomposing sewage.

No. 2.—It is contended that the fresh-air inlet necessitated by the provision of an intercepting trap often acts as an outlet for foul air and creates a nuisance.

This contention is supported by considerable evidence in the report, especially by Dr. Butler, of Willesden, who stated, *inter alia*, that diphtheria had prevailed in his district, more over a series of years in areas where the intercepting trap is universal, than in other areas where the trap was absent.

The report says (page 3, paragraph 10): "With few exceptions the evidence was unanimous that the inlet is an objectionable feature of the house drainage system," not only as an outlet for smells, but also as being sometimes responsible for blockage of the trap through earth and detritus getting into it.

The committee, moreover, were not sure that a fresh-air inlet is essential for an intercepting trap, and they quote some experiments made by Mr. Steele in support of this contention.

All would agree that if the fresh-air inlet is placed in an inappropriate position it may at times become a nuisance by acting as an outlet for drain air instead of as an inlet, even if provided with a mica flap; but even if this is so, it may be argued that a smell coming from this inlet indicates that there is "something wrong" with the drain which requires remedying. In other words, the fresh-air inlet becomes a useful "detective." The remedy, also, if a remedy is required, would appear to be that of placing the mouth of the inlet in such a position that, even if it did act as an outlet, it would be harmless.

No. 3.—It is contended that the provision of a trap and its companion ventilation of the house drain increases the cost.

This is obvious, and the report does not deal with this question beyond stating it as a fact. It is not of much importance, for if the trap is really required the question of cost need not be considered.

No. 4.—The final indictment, and that which is of the greatest importance, is that the intercepting trap "forms a serious impediment to the passage of sewage from the house drain to the sewer, and that this frequently results in more or less complete blockage of the drain."

It was this alleged blockage by the presence of traps in the house drains at Willesden that first called the attention of the Local Government Board as to whether the intercepting trap was not more of a danger to the occupiers of a dwelling-house than a safeguard against the intrusion of the air from a sewer. The whole trend of the report is in the direction of proving that this indictment is correct, that such blockage may, and does, often occur by reason of the trap failing to clear itself, and that this objection causes a greater danger to health than the possible admission of sewer air into the house drains.

The contentions by the opponents of the intercepting trap in this respect are:—

(a) That it is always a positive obstacle, and is never clean;

(b) That it is the main cause of the blockage of house drains, with all the attendant evils;

(c) That it contains sewage which, under certain circumstances, is in an advanced stage of decomposition, and is the chief cause of bad smells in the sewers;

(d) That the primary object of good drainage, viz. to get rid of the fouled water expeditiously, is defeated;

(e) That it is, at best, an insufficient safeguard, liable to be forced by air pressure at any moment;

(f) That it forms no obstacle to the passage of rats;

(g) That the supposed dangers of sewer air have been greatly exaggerated.

With regard to these indictments the report contains some exceedingly interesting evidence, and the results of careful investigations and experiments.

The report gives the results of the systematic examinations by Dr. Butler of intercepting traps in his district, which show a total number of blocks of 3.7 per cent. of the total drain inspections. In addition to this the committee caused examinations to be made of traps in other districts throughout the country, with the result that of the traps examined 6.9 per cent. were found to be blocked at the time of examination, and 16.2 per cent. "gave evidence that at one time and another they had been blocked sufficiently to cause an accumulation of sewage in the inspection chamber." The total number of traps either blocked at the time or indicating previous blocks amounted to no less than 23 per cent. of the total traps examined for both purposes.

But this is not all. Mr. Patten Barber, the Borough Surveyor of Islington, carried out a series of exhaustive trials in order to ascertain what amount, if any, of the solid matters, usually flowing in a house drain would be retained in an intercepting trap, placed in the usual manner upon a house drain. These experiments showed conclusively that with every class of trap he tried (seven in number) more or less solid matter was always retained in the trap. In some cases this amounted to from 42 to 49 per cent. of the solid matters, and in others from 73 to 78 per cent.

If it were not for these experiments, it might be argued that some, if not all, the blockages might have arisen from one or other of the following causes: the improper fixing of the trap, the choice of an improperly designed trap, the insufficient fall of the house drain; or, from its size, the admission of some foreign matter into the house drain; or from some other cause for which the intervention of a trap *per se* was not responsible; but in view of Mr. Barber's experiments, which appear to have been carried out with great skill and care, these arguments appear to be inadmissible.

It may, of course, be argued that the two-gallon or even the three-gallon flush is insufficient to keep the trap or even the house drain clear of obstruction.

In this connection Mr. Boulnois mentioned that about fifteen years ago he carried out some experiments with house drains, laid at similar gradients to those in Mr. Barber's experiments, which conclusively proved that such flushes were insufficient to clear a drain (laid without any trap), except by many successive flushes. It was very interesting to observe how it required flush after flush to induce the faecal or other solid matter to move a few inches at a time in a drain, and it showed that until there was sufficient obstruction to raise a slight "head" of water on the obstruction itself it remained immovable.

If this was so in the drain itself, we can quite understand that there must arise at times a considerable accumulation in the intercepting trap. It is not stated if Mr. Barber found the same difficulty in moving the solid matter in the drain itself when carrying out his experiments. If there is this difficulty in keeping the house drain clear of deposit, the indictment against the trap, that it is one of the principal

causes of foul smells in the sewer, must be greatly modified, as the drain itself becomes a greater contributor.

The remedy, if the trap is to be retained, appears to be either that a larger flush of water is necessary or that the drain must be laid with a steeper gradient, or that the design of the present trap must be altered.

Mr. Barber's experiments go to show this, for whereas a 4-in. trap, "No. 4," retained 79 per cent. of solids, an "experimental" trap he tried only retained 8 per cent. of the solids, and this after ten experiments, in which on six occasions no solids whatever were left in the trap.

With regard to the possible forcing or unsealing of an intercepting trap by air compression in a sewer, the committee deal with this question at some length, and refer to the Bristol experiments. They come to the very proper conclusions that

"When a trap is forced by pressure the water seal, though reduced in depth, is not liable to be destroyed"; and they further state

"On the whole, therefore, it would appear, according to the evidence presented to us and according to our own experimental observations, that under practical conditions the intercepting trap usually answers its purpose as a barrier to the passage of air from the sewer into the house drain."

With which conclusion one can cordially and entirely agree; it is well known that air will always take the least line of resistance.

As to the passing of rats through a trap, the report states that in the opinion of the committee it is doubtful whether the trap is a barrier, and they give two instances of chased rats seeking refuge through traps into house drains. In the cases quoted it would appear that the rats were actuated by fear, and that in order to escape they preferred a bath to sudden death. The trap, however, is a barrier to rats under normal conditions, and they will not pass through the water in a trap except under some dire pressure. It is evident that rats, like sewer air, will take the least line of resistance.

One of the most important investigations of the committee is that of the chemistry and bacteriology of sewer and drain air, on which considerable time and thought appear to have been devoted.

The conclusion to which the committee arrived is as follows:—

"The results obtained by these observers are practically identical, and they indicate that in sewers, whether old or new, ventilated or unventilated, in which sewage is moving and is not lying stagnant, the air differs but little from that of the atmosphere outside."

Carbon dioxide was only found to the extent of from 17 to 20 parts per 10,000 as compared with 3 or 4 parts per 10,000 outside, the excess of ammonia and organic matter was almost negligible, and the sewer air was free from any appreciable trace of methane or carbon monoxide, and if present must have been due to the admission of coal gas.

Sulphuretted hydrogen also, they state, is not present in the air of sewers. In some sewers, notably at St Helens, Lancashire, this gas is found, due to the nature of the trade effluents discharged into the sewers, but, of course, this is a rather abnormal case.

Dr. Haldane, however, has found that this gas is given off in considerable quantity "from the traps of house drains in which sewage is apt to be retained, such as large grease traps."

This evidence by Dr. Haldane is another serious indictment of the trap, although in this case he refers specially to "large grease traps."

With regard to the smell of sewer air, which is evidently not due to sulphuretted hydrogen, but more probably from "the presence of minute quantities of a variety of volatile substances," the report says, "it is doubtful whether the smell of sewer air is usually more offensive than drain air," and that "untrapped waste-pipes or sinks and lavatories discharging into the open air" may cause a "serious nuisance."

The committee are further of opinion that the effect of smell on the human body may not only be repugnant, but that "there seems to be no reason to doubt that it may produce definite ill-health."

With regard to the bacteriology of sewer air, they made many investigations, and, *inter alia*, they say:

"The bacteriology of sewer air has been the subject of many investigations, and in one respect the results obtained have been practically uniform—namely, in showing that notwithstanding the immense number of microbes in sewage, the number to be found in sewer air is extremely small."

Further, they say that

"It seems also clearly established that not only the bulk of the bacteria of sewer air are derived from the atmosphere, but also that bacteria of sewage origin—that is, those that may be pathogenic—are very rarely present in sewer air, and that, when their presence can be detected at all, their number is very small."

They then deal with the bacteriology of drain air as distinguished from sewer air, and they arrive at the conclusion that there are more microbes in drain than in sewer air, and that this is mainly accounted for by "splashing," which occurs in the passage of sewage in a house drain, "especially when falling from a height or passing through a trap." This makes a further, and rather unexpected, condemnation of the intercepting trap, and it is difficult to see how splashing could be prevented in a soil-pipe unless it were made in the form of a spiral, and even then there would be some splashing. The question of the possible passage of microbes from sewers into drains is dealt with at very considerable length, and altogether no less than fourteen pages of the report are devoted to these questions of the chemistry and bacteriology of sewer and drain air.

The conclusions at which the committee arrive are as follows:—

"The results of these experiments emphasise the point to which we have already referred—namely, that the bacteriological evidence indicates that if any bacterial danger exists at all in house drainage, it is to be found in the drain air that may escape from the outlets of ventilating shafts of house drains. But even this danger requires to be regarded in its true perspective, as we have pointed out."

The paragraphs here referred to are of considerable length, and apparently refer to the important point as to whether disease germs from a neighbouring house can find their way through an untrapped drain into the house in question. This seems to be the crux of the whole question. The object of the intercepting trap, as I have always understood it, is to sever, or isolate, the house from the joint drainage of other houses in order to secure safety from possible infection from other houses.

It would appear from this important report that it is extremely doubtful if this result has been obtained, and that, notwithstanding the numerous legal cases that have been fought and won on the question of sewer air entering houses and causing disease and even death, we are now told that drain air is more dangerous than sewer air, and that the intercepting trap is not only a delusion and a snare, but that it is a positive danger to the health of the inhabitants owing to its liability to choke, the accumulation of sewage which it holds, the germs which it emits, the splashing which it causes, and its interference with the proper ventilation of the sewers.

To those who have been brought up in the belief that great reliance was to be placed on the proper trapping and pneumatic severance of a house drain, this report is bound to shake our faith, for in view of the evidence that was laid before the committee, and the care with which they carried out their investigations, we are bound to accept the conclusions at which the committee have arrived.

In connection with this vital question, and in conclusion, it is very interesting to refer to a book published in the year 1898 by Mr. Alfred Roechling, M.Inst.C.E., a Fellow of our Institute, entitled "Sewer Gas and its Influence upon Health," in which the author deals with the question of sewer air and its dangers, and he gives a number of quoted cases in which sewer air had been held by the Court to have produced disease, and even caused deaths.

ROYAL SOCIETY OF PAINTERS IN WATER COLOURS.

THE Winter Exhibition of the Royal Water Colour Society is now open to the public at the Galleries in Pall Mall East; it is the one hundred and fifty-ninth in series, and before closing on the 19th of next month it will doubtless and deservedly be visited by countless numbers of interested spectators. For it is an Exhibition that appeals by reason of the large proportion of earnest work. Was it not Miss E. T. Fowler who wrote, "It is aspiration which counts, not achievement; pursuit, not realisation; quest, not conquest"? Here, however, we are glad to recognise achievement, realisation and conquest.

The President (Sir E. A. Waterlow, R.A.) is well represented by a dozen works, of which it will suffice to refer to the following: "St. Margaret's Bay" (No. 9) is altogether delicate, and the mingled blues, greens, and lilacs depicted

on the briny waters are realistic. A companion to this, both in quality and style, is "A Chalk Headland, St. Margaret's Bay," and other meritorious compositions are "The Farmhouse" and "A Sussex Watermill"; but a presidential and exhibitional gem is "The Ford," wherein we find in happy conjunction breadth, brightness and atmosphere. The Vice-President (Mr. Alfred Parsons, R.A.) shows three works, of which "The Elder Tree" is distinctly pleasing, and in "The Winding Path" more than a word of praise is due to the basket of flowers. Ten pictures are contributed by Mr. Arthur Hopkins; "Willapark Head, North Cornwall," is vigorous, and "Merlin's Cave, Tintagel," though not equal in merit, is certainly to be noticed, whilst "Lye Rock, Bossiney Bay," is prettily touched in. "Sunset, North Devon," too, is most effectively portrayed.

Mr. W. M. Hale is one of the satisfactory executants in works such as "Newlyn Harbour—Sunrise," "Moonrise, Lago Maggiore," and "Pendennis Castle," the last-named being excellent in warm sepia. One of the most prolific contributors is Mr. Herbert Marshall, with his fourteen canvases, though he does not touch the high-water mark reached by Mr. E. R. Hughes, who has a similar number on the walls. However, Mr. Marshall exhibits very good work in "Off Billingsgate," where the rêve effect is prominent; and "Leicester Square," haunted by the artistic ghosts of Hogarth and Reynolds, draws attention through its own intrinsic merit, irrespective of the sublime shades. "Old Church, Dort," is a pretty little piece, but when we regard "Cannon Street" we regard cardboard. Mr. Hughes shows work varying both in class and quality; his Iona Abbey pictures would be better if the hue of the stonework were less green. Is it he or we who are perchance colour-blind? His portraiture merits the highest commendation; both technique and limning are charming, as shown in "Mrs. T. Matheson," "Josephine Tanner," "Kathleen Mendleson," "Dr. H. Mills," and others.

Mr. R. W. Allan has evidently bathed in Phœbus' rays, "Mentone" being redolent of sunlight, and showing also plenty of human interest; "Perugia" is, perhaps, the best of his exhibits, whilst "Brixham" is very hard and clean-cut, the only pleasing detail being the nearer small boat; "The Church of the Holy Sepulchre, Jerusalem," is quite suggestively correct, but fails to satisfy in its entirety.

Of the work of Mr. Tuke, A.R.A., attention need be drawn only to "The Fountain," with its characteristic figure, but the treatment is somewhat rough. Mr. J. J. Hardwick's fruit and flowers are delightful, as witness "Primroses," "Red and White May," and "Plums," the bloom on the fruit in the last-named being touched off to perfection. In "The Lace Shawl" Mr. J. Paterson, R.S.A., shows a well-modelled head, but his "Caerlaverock Castle" and "Summer in Skye" do not prove attractive. Commendatore Walter Crane has eleven exhibits, of which "Under the Moon," "In a Beech-wood" (a little gem), "A Forest Path," "A Window of the Wood," and "The Path to the Sea—Danish Coast" are delightful, the last-named in neutral, but not dull, tones. But some of Mr. Crane's work we should not have known to be his, such as "A Deer Park" (where the antlers seem exaggeratedly large), "An Aviation Meeting" (showing no evidences of Walter Crane's or anyone else's art), and "Girl Gardeners, Denmark," which is most uninteresting.

Mr. T. M. Rooke has some good work; "Ely—from the Meadows" is a pretty piece, and is preferable to the larger scale picture of the south-west angle of the cathedral, painted for the Birmingham Municipal Art Gallery, the station-point in the latter being taken too close to the subject; but with the technique we have no quarrel. "Via dei Bardi, Florence," shows a narrow thoroughfare between relatively high buildings, and is commendable. "The Ambulatory, St. Bartholomew's," we have already seen in the Fine Art Palace at the White City, and we are not attracted by it, for it is out of drawing. We cannot congratulate Mr. Hughes-Stanton on his work, which looks crude and elementary; contrast, for example, "Morning, Equihen, France," with the President's "A Chalk Headland, St. Margaret's Bay." The late Mr. Clarence White is represented by some admirable work and by some less admirable; of the former we may mention "Sunshine and Shower," "Snow in Llanberis Pass," and "A Snowstorm on Snowdon." The sketches at Antibes and Chabéry by Mr. J. Parker are, generally speaking, good, "The Fort, Antibes," being specially noteworthy. Mr. Lamorna Birch's work is not greatly attractive; it is somewhat thin, sketchy, and perhaps even crude in places. "The Golden Sun" shows a tendency towards the aujourd'hui touch, which is to be deprecated.

Of Mr. J. C. Dollman's pictures we can notice but two; "Underhill Lane, Ditchling, Sussex," and "Circe" are both attractive in their several ways. The latter deserves special notice for its composition and colour scheme, the group of leopards being very good. Mr. Charles Gregory shows work to which none in the Exhibition is superior; "Gardens at Guildford," "A Guildford Bywater," and "The Mill Basin at Guildford" are perfectly charming, but "A Surrey Common" is finicky in touch, lacking breadth of treatment.

Mr. R. Thorne-Waite deserves commendation for "The Way to the Mill" and "The Sussex Downs," but as much cannot be predicated for "Thunder"; in all he has eleven exhibits. We are much afraid Miss Clara Montalba is passé, for of her half-dozen canvases there is not one which appeals to us for its qualities, or which seems to recall past work from the same brush. Mr. Napier Hemy, R.A., is well represented by characteristic work. We must notice Mr. Smallfield in order to draw attention to the absurd affectation of "Still Waters" and "Sleep on the South Downs," where each of these small panels is filled up by a face, leaving no room for scale background. Mr. Sims, A.R.A., is represented by crudity, and one can but marvel that such a piece as "Swallows" should find a purchaser; fortunately, however, for artists, tastes differ. Mr. R. Barratt has some very pleasing Venetian work, "By the Clock Tower" and "The Flagstaff of St. Mark's" being specially commendable. "The Dorsetshire Coast, near Lyme Regis," by Mr. W. E. Walker, is very brightly touched in. More we would like to notice, but for lack of space we must rest content with expressing warm approval of Mr. Bulleid's work, which is an improved edition of Alma-Tadema; and, finally, we would commend Mr. H. Henshall for his vigorous brushwork and warm colouring.

Other work there is plenty, both meritorious and otherwise, the whole effect of the Exhibition being entirely satisfactory.

OUR CONTEMPORARIES FROM OVERSEAS.

Deutsche Bauzeitung (Berlin) has further views of the pair of buildings forming the new Royal Court Theatre at Stuttgart, and also illustrates the Wertheim palace-shop at Berlin.

Het Huis (Amsterdam) contains further views and description of Old Zwolle, and an illustrated account of the church of St. Eusebius at Arnheim.

Stone (New York) exalts in the displacement of wood pavement by granite setts under the stress of our modern motor traffic, and points another lesson on concrete failure by reference to the disaster at Kansas City. Excellent illustrations are given of the interior of San Vitale, Ravenna, and of San Giovanni in Laterano, Rome.

Engineering Record (New York) gives a report of an investigation of the effect of wind pressure on the walls and roofs of buildings, with special reference to the suction effect on the leeward side by Professor Albert Smith, of Purdue University. Another interesting paper on the "Importance of testing sands" is contributed by Cloyd M. Chapman.

COMPETITION NEWS.

BRADWELL.—The Joint Isolation Hospital Committee have decided to throw open to a limited competition the work of preparing a scheme for the proposed enlargement of the hospital. Dr. Reid, the county medical officer, will nominate an assessor. Architects practising within a five-mile radius will be eligible to compete.

GLASGOW.—One hundred competitive designs have been received in the Municipal Buildings Extension competition, and the assessor, Mr. John J. Burnet, LL.D., A.R.S.A., is now engaged in selecting from these the six designs whose authors are to be invited to join in the second competition.

TYNEMOUTH.—The local Education Committee last week adopted the following recommendation: "That a junior mixed department, to provide accommodation for 480 junior infant children, be provided at the King Edward School site, and that two new school departments, to accommodate 450 senior mixed and 400 junior and infant children respectively, with caretaker's house, be planned for the Spring Garden School site, but that accommodation for 300 senior mixed and 150 juniors and infants combined be provided at present." It was further resolved to advertise for an architect or architects, living or practising within a radius of twelve miles from North Shields, for the erection of one or for two new elementary schools.

The Architect.

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FORTHCOMING EVENTS.

<i>Saturday, November 23.</i>	
Royal Sanitary Institute : Provincial meeting at Doncaster, discussion on "Town Planning in Relation to the Development of the South Yorkshire Coalfield," to be opened by Dr. A. B. Dunne, at 11 A.M.	
<i>Monday, November 25.</i>	
Architectural Association : Paper entitled "The Prosaic in Architecture," by Mr. Horace Cubitt, A.R.I.B.A., P.A.S.I., at 8 P.M.	
Surveyors' Institution : Paper on "Land Values Taxation," by Mr. E. M. Konstam, barrister-at-law, at 8 P.M.	
<i>Tuesday, November 26.</i>	
Royal Society of Arts : Paper entitled "The Hardwood Timbers of New South Wales," by Mr. W. H. Warren, LL.D., M.Inst.C.E., at 4.30.	
<i>Wednesday, November 27.</i>	
Edinburgh Architectural Association : Associates' meeting, Demonstration in Ironwork, by Mr. T. Hadden, at 8 P.M.	
Institution of Municipal Engineers : Joint Southern and South-Eastern District meeting at 4 Southampton Row, W.C., at 8 P.M.	
<i>Thursday, November 28.</i>	
Sheffield Society of Architects' Students' meeting, Paper entitled "A Visit to Bath," by Mr. J. C. P. Toothill, at 7.30	
Concrete Institute : Paper entitled "Bills of Quantities for Reinforced Concrete Work," by Mr. J. M. Theobald, F.S.I., at 7.30 P.M.	

NORMAN SHAW.

THE death of Mr. Richard Norman Shaw, R.A., last Sunday has removed from amongst us the last of the great personalities in the architectural profession of the Victorian Era, and amongst his contemporaries there is scarcely one who has had a more widespread and lasting influence, not only upon the work of his immediate worshippers and imitators, but upon the history of English architecture during modern times.

It is not going too far to say that the present position of English architecture in domestic work is unquestionably due to the example and influence of Norman Shaw. He it was who showed that it was not only possible, but desirable, that every house should have an individual character of its own. In his London houses, Lowther Lodge, Queen's Gate; Swan House, Chelsea, no less than in his country mansions, Wispers, Dawpool, Chesters, Cragside, and others, there is a differentiation of treatment that we may attribute to a desire for characteristic expression as much as to a display of the artist's versatility.

It has been said that Norman Shaw was essentially a Gothic man and incapable of completely understanding the merits of Classic treatment. This statement we have always held to be unjust to the character of a great artist. On occasion he could produce as symmetrical and formal design as the strictest adherent to the principles and regulations of Palladio, but he recognised with truth that it is but rarely that the English country house should be formal in character. When the occasion seemed to him to require formality, as at Lord Portman's, it was provided, but the picturesque rather than the formal is undoubtedly more in consonance with the tradition of the English home as well as with the environment in which it is most often placed, and there can be no question that Norman Shaw's country houses ever seem to be not only in harmony, but in unison with their surroundings.

The greatest lesson that Norman Shaw taught to architects of the nineteenth century was this necessity of harmony between the house and its environment, and the influence of the lesson has been exercised until the present time, although there is unfortunately amongst some of our young designers a tendency to forget the lesson and to suppose that rough-cast is always and everywhere a suitable material. No doubt this is the result of a conviction that rough-cast is easy to design and cheap to build.

Norman Shaw's greatness is evidence to our young men that if they would attain to a high position and worthily uphold the dignity of their art, the last thing they must think of is easy design. The master's work never suggests that it has ever been influenced by a desire to save trouble, and neither does it give evidence of laboured endeavour.

Norman Shaw was one of the first to see the capabilities of the sympathetic use of material, and in so doing gave the direction which may almost be described as a turning point in modern English domestic design; a direction which has been followed by numerous workers, not only amongst Mr. Shaw's own personal pupils, but including very many other designers both in this country and in the United States of America.

Although Norman Shaw was, in common with most of the men of his generation, an ardent student of Gothic architecture, as is evidenced by his "Architectural Sketches from the Continent," published in 1872, he must be esteemed as the one personality who did more than any other to turn the course of modern English architecture from Gothic to Renaissance methods of design.

His New Zealand Chambers in Leadenhall Street was a startling revelation to his contemporaries, and led the way for the adoption of the so-called Queen Anne style which was really a modification of English Renaissance tinged with Gothic feeling.

It was inevitable that the study of English Renaissance, even through Gothic spectacles, should in time lead to a more thorough comprehension and even to a more strict adherence to the principles and methods of Renaissance work not only of the English type, but also Italian, French, German, and Spanish.

The picturesqueness which he found to be essential in the designing of country houses naturally tinged Norman Shaw's designs when he made use of Renaissance forms of detail as his means of expression, and it is therefore due to a feeling for the picturesque that we have the freshness of his design for the Piccadilly Hotel. He has taught the lesson that formal composition does not connote coldness or tameness; that it is possible to design a perfectly symmetrical building which shall nevertheless possess piquancy and even playfulness of mass as well as of detail.

One example which Norman Shaw has set has not attained any considerable amount of recognition, except that of condemnation by critical purists. We allude to his daring departure from recognised canons of construc-

tion, as, for example, his balancing of a pair of walls enclosing a corridor on one wall midway between them at Lowther Lodge; the projection of the front of Swan House, Chelsea, seemingly suspended like Mohammed's coffin between earth and heaven, or the support of the main wall of the Piccadilly Hotel on girders so as to obtain his desired depth for the column, and yet in all these departures from logic and convention have we not rather the boldness of the master-artist taking advantage of the benefits that modern engineering construction afford to the architect who is bold enough to overstep the limits of precedent?

Mr. Shaw showed himself a pioneer also when at Bedford Park, Chiswick, he proved that architecture and artistic design were as desirable for the small house as for the mansion, and in this instance he may be said to have initiated the idea of the garden city and the garden suburb in so far as their aim and intention depend upon architecture as well as upon gardening. The gardens alone would not have seized hold of the popular imagination to the extent that combination with the artistic design of the house has done.

Mr. Norman Shaw's influence was exercised not only by his buildings, but by his draughtsmanship, which was of a very high order, and his productions were eagerly looked forward to in the Architectural Room of the Royal Academy year by year. In common with others of the great Victorians he undoubtedly exercised a tremendous influence on architectural draughtsmanship, and was in no small degree responsible for the high degree of excellence to which it attained at the end of the nineteenth century. Not only in the Architectural Room, but in the Architectural School of the Royal Academy Norman Shaw exercised a powerful influence in the actual training and education of those who were fortunate enough to be allowed to study under his direction, and this personal influence was still more strongly exerted on the arted pupils in his office, many of whom have made honoured names for themselves amongst the architects of our own time, and have further extended the influence of the lessons that their master taught as much by practice as by precept.

It must not be forgotten in the appreciation of Mr. Norman Shaw that, although his predominance was in domestic architecture, he has nevertheless given us not a few examples of ecclesiastical work which show that his early study and thorough comprehension of Gothic principles and detail were worthily applied in the service of the Church, for whom he produced designs that while redolent of knowledge were never archaeological, but always infused with a personal feeling of individual artistry.

Above all things it must be recognised that Norman Shaw was an artist of the first calibre and a great architect because he added to this quality the ability of a practical constructor and of a good man of business.

NOTES AND COMMENTS.

A FULL-PAGE advertisement in the *Times* is an anticipatory counterblast to the reports of the two Departmental Committees nominated by the Home Office to investigate the dangers to health arising from the use of red and white lead. There has now been for some time no doubt that the conclusions of the Committees would follow closely those arrived at by the French Government, to the effect that the dangers to health inevitable from the use of red and white lead are so serious that their use should be greatly restricted.

It is clear from the advertisement that the assertions therein made are put forward in the interests of the manufacture of red and white lead, and one must therefore regard the cry of "national importance" as on a level with that of the silversmiths of Ephesus.

The advertisement suggests that the reports of the Committees will result in the imposition of arbitrary restrictions affecting the use of articles indispensable to

every household, and it is definitely stated that "powerful financial interests are at work to secure the total suppression of red and white lead in the interests of various substitutes, mainly of foreign origin," and charges of incorrect procedure are made.

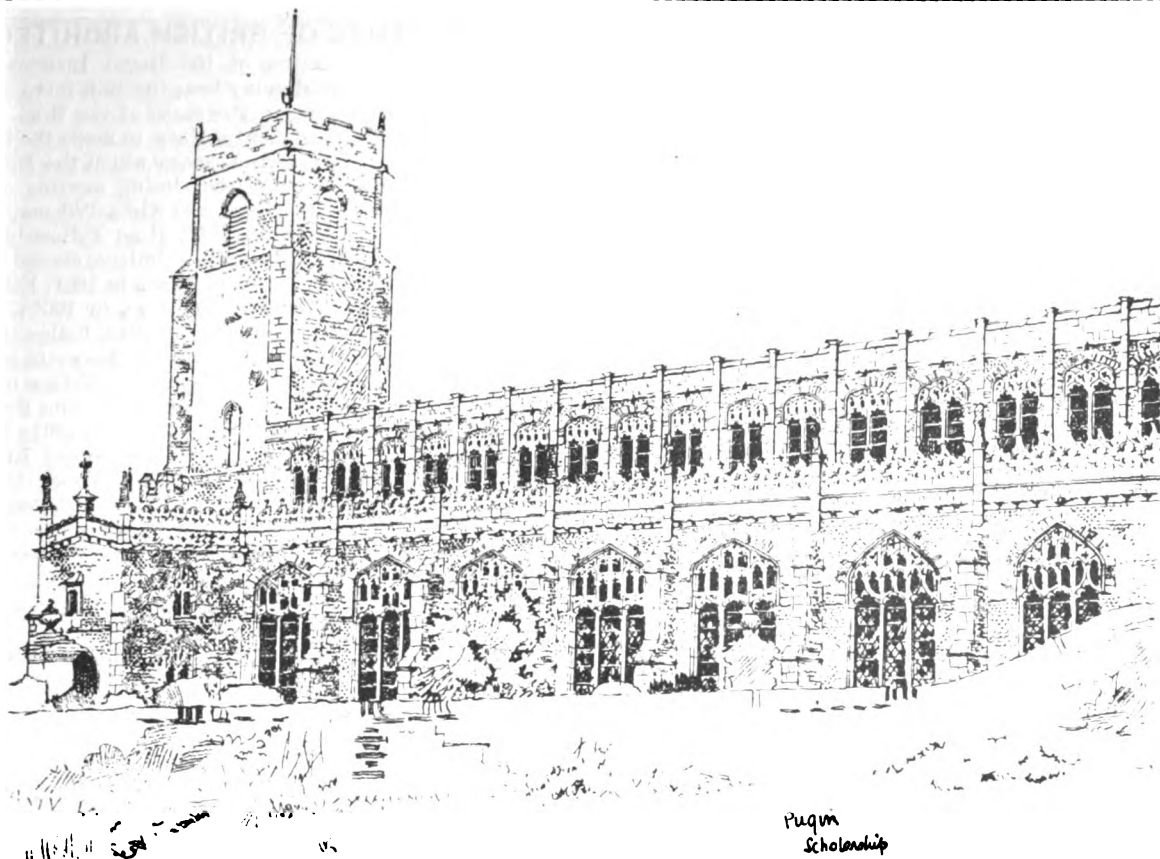
It is charged, firstly, that the inquiry has been carried on behind closed doors. We believe that this is usually the practice with regard to Departmental Committees, and in many cases is desirable in order that evidence may be given which it would be impossible to obtain if the conduct of the inquiry had been carried on in the full light of day. The second charge is that "those who advocated the continued use of red and white lead and those who advocate prohibition were allowed no opportunity of hearing or rebutting the contentions put forward by their opponents." Here, again, the departmental inquiry is an endeavour to arrive at the truth, not a public trial of the ingenuity and ability of counsel and expert witnesses. The third charge is that "a number of eminent foreign scientists and business men were invited to tender expert evidence," and that "they affirm that they have been brow-beaten and discredited; that they have been treated as hostile witnesses are treated by an aggressive cross-examining counsel." We presume that those who have drawn up this advertisement are voicing the views of expert witnesses on their own side, and inasmuch as expert witnesses are more often than not advocates, it is necessary that they should be cross-examined, and we have no doubt that the witnesses who appeared on the other side have been impartially so treated and tested by the Departmental Committees.

It has for some time past been understood, as we have indicated on more than one occasion, that the reports of the Departmental Committees would be unfavourable to the future unrestricted use of red and white lead, and, however much we may sympathise with the chagrin of those who are engaged in the manufacture, we can but recognise that it is hopeless to expect at this time of day that the vested interests of the few will be allowed to militate against the health of the many. For our part we are quite content to wait and accept the report of the Departmental Committees as at any rate the honest expression of opinion after careful investigation and consideration of all available evidence.

Another ancient ship has been discovered in the bed of the Thames at Woolwich in connection with the extension of one of the Borough Council's electricity stations. It appears that there is a tradition of a vessel having been sunk in the Thames near this spot in the reign of Charles I., and the remains now found may possibly belong to that vessel. It would not, at any rate, be correct to argue against the possibility by reason of the good state of preservation of the oak of which the wreck is constructed. Far more ancient remains dating back to the time of the Vikings show the remarkable durability of oak buried underground, and in comparison with these latter the present finds are quite modern.

The loss which Rotherham is now lamenting of a cart-load of Roman remains which had been stored away in the cellar of the Mechanics' Institute, now the property of the Rotherham Corporation, is almost incredible, and attention has been drawn to them by Mr. Freemantle in a lecture on "The Call of Templeborough, a Roman Station," to the Hunter Archaeological Society at Sheffield University. We wish Mr. Freemantle and his friends success in the establishment of the "Templeborough Purchase and Exploration Fund of 1912," by which they hope to carry to a successful conclusion the excavations which were started and abandoned some thirty-five years ago, some of the results of which were the missing Roman remains.

The Rural Cottages Bill, introduced by Mr. Stanier with the support of Mr. Jesse Collings and other Unionist M.P.s, seems to be an earnest endeavour to solve one of the greatest difficulties in connection with rural



BLYTHBURGH CHURCH, SUFFOLK.—From a sketch submitted for the Pagin Studentship, 1912, by Mr. A. M. DURRANT.

housing, and has for its matter an application of the nation's credit to enable owners of land to build cottages which can be let at a rent not exceeding two shillings a week. The rural district councils who are under less favourable circumstances than actual land owners are to be assisted to build and let cottages at a rent not exceeding half a crown a week. Other provisions in the Bill enable tenants to buy their cottages on particularly easy terms. It is proposed that a housing department shall be established at the Local Government Board, with finances provided by an annual rural housing grant up to £200,000.

We regret to have to record the death of Mr. Edward Blakeway I'Anson, M.A., for the following particulars of whose career we are indebted to the *City Press*:—He carried on a professional practice commenced by his grandfather over a hundred years ago and continued by his father, the late Mr. Edward I'Anson, of Grayshott, who was for many years the Surveyor to the Merchant Taylors' Company, as well as a Liveryman of that Guild. It is remarkable that the practice has always been carried on in the same building—an old-world mansion erected soon after the Great Fire of London. Mr. E. B. I'Anson's death occurred on Sunday at his house in Argyll Road, Kensington, and he was 69 years of age. He joined the Merchant Taylors' Company by patrimony in 1874, and filled the Master's chair in 1901-2, being still on the Court at the time of his death. He was also a Liveryman of the Gold and Silver Wyre Drawers' Company. Mr. I'Anson was the surveyor to St. Bartholomew's Hospital and to Charterhouse, and the architect of many notable buildings, among which may be mentioned the London Commercial Sale Rooms in Mincing Lane, the recent extensions of St. Bartholomew's Hospital, the offices of the General Steam Navigation Company in Trinity Square, the mansion of the Lord Chief Justice at Cranleigh, the Public Libraries at Newington and Clapham, the Cottage Hospitals at Finchley, Broseley, and Much-Wenlock, a Convalescent Home for Llandudno, and the Hospital Convalescent Home near Swanley Junction, Kent. In addition to being a Master of Arts of Cambridge University (having graduated at St. John's College), he was a Fellow and past Vice-President of the Royal Institute of British

Architects and of the Surveyors' Institution, being also a vice-president of the latter at the time of his death.

NOTES ON BOOKS.

"A Digest of Law relating to Arbitrations and Awards," by H. Foulkes Lynch, Solicitor. Fifth Edition. By A. R. Randall, of the Middle Temple. (London: Effingham Wilson. 5s.)

When a book has reached its fifth edition it is evident that it has fulfilled a want, and all that is necessary is to draw attention to the fact that another edition has been published bringing the subject-matter up-to-date.

We have looked through it and think that anyone interested in arbitrations would find it a useful guide. The law is set out plainly and concisely, and the examples given are clear and to the point. At the present day the questions which arise during the course of arbitrations are not less numerous or difficult than in former years, and, in fact, it appears to us that the conduct of an arbitration is becoming more regular and defined than it used to be.

Certainly the old idea that the parties having elected their own tribunal are bound by that decision and that there is no appeal against an arbitrator's award is far from the fact, for, in our opinion, the preparation of an award is a matter where an arbitrator may very easily go wrong, unless he has special knowledge and experience, and quite lately the matter has been dealt with by the Court of Appeal.

All authorities thought that there was no means of appealing against a case stated for the opinion of the Court under section 19 of the Arbitration Act during the progress of an arbitration, but the Court of Appeal has recently upset that theory, and now it has been held that where a Divisional Court gives advice to an arbitrator upon a case stated by him, pending the arbitration proceedings, there is no appeal from the opinion of that Court, but where an arbitrator acting upon the opinion given by such a Court makes an award wrong in point of law upon its face, the Court of Appeal can set such award aside or remit it to the arbitrator, even although that involves saying that the law is different from that which the Divisional Court expressed it to be.

We do not find that the effect of this case has been stated in the volume before us, and have stated it not as in any way detrimental to the volume or the work of the author, but only to show that even when one has before them the latest edition of a book which is evidently carefully prepared and greatly used, it is well to consult the latest authorities on the subject to ascertain whether the law has been more recently explained.

"Reports of Rating Appeals heard before the London and other Quarter Sessions, the King's Bench Division, the Court of Appeal, and the House of Lords, 1909-1912." By E. K. Konstam and H. R. Ward, of the Inner Temple, Barristers at Law. (London: Butterworth & Co.)

This volume forms a continuation of the series in which the last collection of reports by one of the present editors (Mr. E. K. Konstam) appeared in 1908. In the present volume will be found reports of most of the rating cases of importance which have been decided in the Supreme Courts since that time, together with selected decisions of quarter sessions. The general arrangement is similar to that of previous volumes of the series, which are so well known that it is unnecessary to say more than another volume is added thereto containing the most important decisions on this particular subject in a form which is at once handy and reliable. It is a great comfort to have these cases on particular subjects collected and at hand rather than having to depend on various volumes of the different reports, and the reports are so full that they become useful guides both to the lawyer and valuer, as well as to the authorities on the various intricate questions which are constantly being brought before them.

"The Elements of Perspective. Illustrated by numerous examples and diagrams." By Aaron Penley, author of "The English School of Painting in Water Colours," "A System of Water Colour Painting," &c., &c. Revised and partly re-written by A. P. Killik, M.S.A., and D. B. Hedderwick. 1911. Forty-seventh thousand. (London: Winsor & Newton, Ltd. 1s.)

This little book explains clearly the general rules of perspective, but does not extend beyond the point indicated in its title—the elementary stage of the subject. It is, however, necessary before the student can attain to the higher branches of perspective that he should thoroughly understand the elements. There are many young draughtsmen who, having obtained only a rudimentary knowledge, find themselves confronted by awkward problems when they attempt to tackle the architectural perspective of a large or complicated building. The probability is that no book in their possession will solve the difficulty, and they will, therefore, have to be puzzled out without extraneous aid. The student who is thoroughly grounded in the first principles can usually manage to do this for himself; it is therefore important that he should have a complete understanding of the elements, and that he can obtain from this small volume. The edition before us is the forty-seventh thousand, which indicates that it has been found valuable by many generations of young draughtsmen.

"Builders' Quantities." By Horace M. Lewis, Associate Institution of Municipal and County Engineers. Member Royal Sanitary Institute, Lecturer on Builders' Quantities, Poole School of Technology. (London: E. & F. N. Spon, Ltd. New York: Spon & Chamberlain. 1s. 6d. net.)

It seems to us hardly worth while to produce a tiny volume such as that by Mr. Lewis with the idea of teaching anything valuable in regard to builders' quantities. The information given is insufficient for the absolute novice and superfluous for the expert or even the student of moderate experience, say six months in a quantity surveyor's office. The student who could not in that time learn a great deal more than this book teaches him will never be able to take off quantities.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

An ordinary general meeting of the Royal Institute was held at Conduit Street on Monday last, the 18th inst.

Mr. Guy Dawber, acting in the place of the Hon. Secretary, said that it was his mournful duty to make the formal announcement of the long list of losses which the Institute has suffered by death since the closing meeting of last session. They included Sir Lawrence Alma-Tadema, O.M., R.A., elected Hon. Associate in 1877, Hon. Fellow in 1901, Royal Gold Medallist in 1906; Sydney Smirke, elected Fellow in 1888; Thomas Arnold, elected Associate in 1867, Fellow in 1904, placed on list of retired Fellows in 1904; George Tunstal Redmayne, elected Associate in 1872, Fellow in 1877, Retired Fellow 1902; Henry Hall, elected Associate in 1872, Fellow in 1887; John Thomas Bressey, elected Fellow in 1877; George Friend, elected Fellow in 1888; William Frederick Unsworth, elected Associate in 1882, Fellow in 1891; Francis Edward Masey, elected Fellow in 1901; Edward Blakeway I'Anson, elected Fellow in 1880; George Enoch Grayson, elected Fellow in 1886; Charles Henry Rew, elected Fellow in 1905; John Samuel Paul, elected Associate in 1886. Notices of all the above have appeared or will appear in the *Institute Journal*.

The following resolution was passed by the meeting: "That the Royal Institute of British Architects do place on record its profound sorrow for the loss it has sustained by the death of its distinguished and highly esteemed Hon. Fellow, Sir Lawrence Alma-Tadema, O.M., R.A., and do offer an expression of sincere condolence to his family in their sad bereavement."

The meeting also passed a vote of sympathy and condolence with the family of Mr. Sydney Smirke, whose generous contributions to the Institute library, extending over many years, were very greatly appreciated.

A similar vote of sympathy and condolence was passed to the family of Mr. George Enoch Grayson, who had been President of the Liverpool Architectural Society, and had served on the Council of the Institute and on the Practice Standing Committee; and also to the sister of Mr. E. B. I'Anson.

The Secretary announced that the following candidates have passed the Statutory Examination, and have been granted by the Council Certificates of Competency to act as District Surveyors in London: Sidney Walter Bensted, Associate; Benjamin Chaikin, Licentiate; John Docaston, Associate; and Lawrence Alexander David Shiner, Associate.

Mr. J. L. Ball then read a paper entitled

Bath: A Comparative Study.

Those who have much experience in directing the work of students will understand, he said, the difficulty of arousing in them a clear apprehension of the sensuous element in architecture, of that architectonic quality which is neither pictorial, nor sculptural, nor rhythmic, nor perhaps altogether structural. Each art has its own special phase of beauty, incommunicable in the other forms of any other. To discriminate in every species of architecture the essential architectonic element, to compare the various expressions of it, is the true business of the student. And this central secret can be penetrated only through a certain intimacy, by personal contact with the actual works. The supreme teacher of architecture is architecture itself. Its essential properties are properties of solids, hardness, weight, texture, actual size, fixed outlines. Photographs, and even drawings, of architecture, stereotyping as they do a single phase, are no true presentment of it; for a great work of architecture has a kind of personality, fluctuating with mood and circumstance, and can be realised only by those who ramble about its arcades, and who watch for its expression, not at high noon only, but in the twilight and in the morning.

The universal law is that art addresses itself to the senses, and only through the senses to the understanding and the imaginative reason. What is really important to the student is, not to get together a sort of mental compendium of architecture from representations of it, but to use all books, photographs, drawings, to sustain and reinforce the impressions which he himself has received from personal contact with the works themselves. To draw models in the abstract may perhaps be a discipline, but it is not the discipline of architecture.

It is as a Roman sanatorium—*Aquae Solis*—that Bath emerges from the region of fable. The remains of the baths—a small fragment only of the *thermae* which, with temples

and gymnasias, once covered more than seven acres—are nevertheless the most considerable relics of Roman architecture in Britain. From these vestigia the stature, even the features of Hercules may be inferred; we perceive the strength of the giant, and the coarseness. And so, wandering amidst ruined walls and fallen columns, all that we know of Roman architecture seems to acquire an instant reality.

It is not easy to explain the spell which Roman architecture casts over us, its defects are so obvious, its virtues less obvious. How different, we say, is this from the Greek, how inferior its spirit to the Greek spirit. Such conclusion is the result of bracketing together schools of architecture by superficial resemblance, and ignoring the deeper influence of temperament. The temperament of Roman architecture is not Dorian, is not Ionian, is not even Corinthian, it is Composite or Roman. The mixture of conflicting ideas is characteristic of it. What the Romans were always looking for was not perfection of any kind, but power. Nothing was rejected that might tend to make their architecture more flexible, more adaptable to all uses. For the first time architecture steps down from its lofty isolation as an art sacred to the temple and the palace, and becomes in a certain sense popular.

The coarseness, too, of Roman architecture is not an accident but an essential of it, a masculine grossness and predominance which also has a place in Art. This kept it free from the effeminacy which spoiled so much work of the Renaissance, and especially kept it true to a grand tradition of scale. It becomes really a sort of exaggerated emphasis of strength.

The ideals of the Roman people centred very much in the city; the ideal life with them was the urban life. They thought of architecture not principally as domestic nor as religious, but as civic; as the heritage of Roman citizenship and the emblem of Roman order. Therefore they laid cities out with a wise prevision, and adorned them with noble monuments.

The illustration of the Gothic phase has been left by Bath to Wells. Not the cathedral only, but the whole aspect of Wells, preserves the spirit of the Middle Ages. Nothing of this atmosphere exists in Bath, where the Abbey stands alone in a sort of priestly isolation, the last word of Gothic Art in a city of the Renaissance.

Bath Abbey was begun in 1499, replacing earlier structures, was partly ruined at the Dissolution, and partly rebuilt between 1597 and 1616. Thus it belongs entirely to the decadence of Gothic. That architecture which meets us at Wells Cathedral in the flush and animation of a wonderful youth, we find at Bath Abbey in the last stage of a no less wonderful decline; beautiful still, with the beauty appropriate to winter. In Wells Cathedral every line is intense with life triumphant, life contemning death. But in Bath, in this city of pagan memories, it is the pagan sentiment which finds expression in the last words of Gothic Art. In its rigid attenuated forms, from which fire and passion and energy have departed, we see the composure, the high indifference of death. We feel that the end is achieved; the fancy, the invention, the experiment of three centuries of Gothic Art, seemingly inexhaustible, have come by inevitable steps to this, and terminate here, in this chill perfection.

The Roman city, the mediæval city of Bath are gone, or survive only in profoundly interesting fragments. But the famous Renaissance city of the eighteenth century exists. We still walk the streets, still pass in and out of the buildings which are associated with a crowd of brilliant and attractive people, and with creatures of the imagination hardly less real. Quite apart from its historical associations, and from the literary fragrance which clings to it, this city has a real charm and distinction. And in speaking of the eighteenth-century architecture of Bath, said Mr. Ball, the work of Brydon in the nineteenth century must be included; for by the turn of his genius, and by his faculty of identifying himself with his subject, Brydon rivalled, perhaps excelled, his predecessors.

What is the precise value to us of the particular phase of the Renaissance which Bath presents? No architecture has been more absurdly praised, or more absurdly blamed; and it merits neither extreme. This vehemence is to be regretted, for it fosters the common notion that Art is a controversy of personal likes and dislikes. What should attract us in Art, what alone makes it really valuable to us, is the promise of life. We may conceive of architecture as reflecting certain broad and luminous aspects of life, some more imposing, others less, but all in their degree valuable as part of the general heritage of culture; and its

success will depend much more on the manner of the presentation than on the actual worth of the aspect presented. In Bath, the Renaissance of the eighteenth century has no claim to creative genius. It is the architecture of an age which was quick and critical, but not very imaginative or profound. It is part of the learned culture of its age; a culture which valued formula and hated eccentricity. It is the architecture of fine manners and courtly phrases.

In the eighteenth century the classic ideal in Art was a somewhat restricted one; their minds were attracted more by the one perfect expression, the one perfect outline than by the careless opulence of romantic genius. But the faults to which even great romantic art is prone—profusion, excess, lack of discipline—are precisely the faults which the classic ideal by its lucidity and restraint exists to chasten. Restraint, severity, the resolute exclusion from one's work of the superfluous, the crude first idea—what a secret of style is there!

So, then, in this Renaissance city of the eighteenth century the spirit of Roman decorum is revived; its streets and open places and the order of its public and private edifices were civic interests; and we have an architecture austere and sober, devoted to the classic ideal, and with little of the romantic in its mood. Yet a certain sterility marks it, as though some hidden influence were obstructing its development. On the whole there is a sleepy conformity to type, and if any considerable variation is essayed the variation proves degenerate; the constitutional defect of eighteenth century Renaissance being, in fact, a defect of variability. Gothic architecture, Wells Cathedral, for example, shows a readiness to exhibit variations from the normal which is really astonishing; we can imagine it capable of variation almost without limit.

The theory on which the classical Renaissance was based may perhaps go far to explain this defect in it, the theory that the progress of architecture depends on following, with scholarly attention, a perfect model; the perfect model here being the Rome of the Augustan age. But as architecture approaches perfection its variability decreases, and with that its usefulness as a model for practice decreases also.

But, though the classical Renaissance is limited in this way, it possesses the attribute of adaptability to any kind of requirement. Gothic, with all its abounding variability, its intense and flame-like imagination, is wholly without such adaptability. Hence the disaster of the last century—the effort to adapt the solemn architecture of the religious ideal to commonplace and secular uses.

Domestic architecture—architecture, that is to say, in which a definite sentiment or homeliness is expressed—belongs in quite a special sense to the Renaissance. Mediæval architecture had no place in the epic solemnity of its mood for a domestic quality. Whereas from the beginning the function of the Renaissance was to bring the influence of architecture into the home of the plain citizen, to give in terms of architecture an expression of the domestic ideal.

Mr. Mowbray Green, in proposing a vote of thanks, said that Mr. Ball had treated the subject in a very broad and masterly way, however much they might differ from him as to details and his conclusions. They might not all agree with the suggestion that the work of the Renaissance was, to give to the plain man some idea of architecture in his domestic life. The essence of the paper apparently lay in the words "adaptability" and "variability." It seemed to him (the speaker) that it was with the variability of the Renaissance that they should be mainly concerned. To his mind, the outstanding feature of Bath was the example it set in the development of a city. In the seventeenth century it was but a little place—practically nothing more than a Roman city measuring four hundred yards from wall to wall. That was an important point to remember if they would arrive at a just estimate of the achievement. Up to 1775 the local men had introduced a comparatively broad treatment in their frontages, though the type of Renaissance was debased. But no particular method had been definitely adopted. It needed a master mind to lay down the broad lines of development. An important point had been touched upon in the lecture in the comments on "scale." Mr. Ball was not alone in thinking that the Renaissance buildings of Bath were without scale. But perhaps the question of scale was explained by the desire of the designers to conform to the surroundings of the city, which only permitted it to develop northwards. Of the fine scale of the various long streets and squares there was very ample evidence. One example was Queen's Square, which measured 300 feet from side to side. The extraordinary thing was that as the

century progressed the scale of the lay-out became bigger and bigger. It seemed to him that to have overloaded Bath with buildings on a large scale would be depressing. To the intellectual environment of the city Mr. Ball did ample justice.

Mr. L. March Phillips, in seconding the vote of thanks, said he had never listened to a lecture which struck him as being more in accordance with the needs of the age. Mr. Ball had stated that it was the spirit of the Roman Renaissance which inspired eighteenth-century Bath. It seemed to him, however, that the Renaissance of Europe was composed all along the line of two streams—viz. Roman and Greek. Very often the forms used are purely Greek in their feeling. There was a process of sifting in progress all the time, and some architects were taken up with one and some with the other style. Wren, for instance, was Roman; the Adams were Greek. In Sheraton furniture, old Sheffield plate, &c., there were ideals which were certainly not Roman. The lecturer had made his paper very humanly interesting. It would be a good thing if writings of that kind could be distributed among the ordinary public, as then architecture would become for them a human subject. Architecture was now cut off to a certain extent from life. That was an enormous loss, both to life and to architecture. Not only did it cut off from life a subject of extraordinary interest and an art which after all gave everyone their home, but it cut one off from the life and labour of the people. Art was something more than the mistress art; it was the mistress industry. If you unite architecture with life you dignify life and labour. That, he believed, was going to happen. The whole subject of architecture ought to be suffused with life. If everyone got to think of architecture as the expression of the vital past of people then they would wish to make it an expression of their own lives also.

Professor W. R. Lethaby remarked that Mr. Ball had given them an extremely able paper. Bath was a wonderful city—perhaps the only city in England that has any architectural weight at all. What had struck him when there in the early part of this year was the fear that we do not value Bath sufficiently as a national asset. This generation had fine things given to them which they could not live up to. Euston Station was so good in its way that they did not know how to make use of it—the central hall was now simply a waste space. He would suggest whether it was not possible for something to be done for the better appreciation and maintenance of Bath. It cried aloud for something national to be done. Bath might well be a university town. Bristol was a most depressing town, which would blight the life of any young man who had to study there for five or six years. Personally he would just as soon think of setting up a university at Wolverhampton as at Bristol. Priory Park was too big and fine altogether for people to-day. But the time must come when decentralisation will take place, and it was to be hoped that then Bath would get its chance.

Mr. G. Hubbard said it occurred to him that perhaps architecture did not influence people's lives quite as much as they imagined. Every age had its own particular architecture expressing the feelings and culture of that particular period. If that was so, it was the life which influenced the architecture, rather than architecture the life. Greek architecture was a standard of perfection in so far as it represented the culture of the period. He took it that the people of to-day were not a particularly cultured lot; they were not as sincere as they might be, and as a consequence their architecture was not as perfect as it might be. Bad as their architecture was to-day, it represented the contemporary unfortunate low standard of civilisation. No doubt, if they could go back to the time when Bath was being built, they would find themselves living up to a higher standard than at present. Gothic architecture was an expression of faith: when faith was highest, Gothic was at its best. It seemed to him that architecture did not elevate the people, but rather that people elevated architecture.

Professor Blomfield, in putting the vote of thanks, remarked that the last speaker was correct in saying that architecture represented what a generation was capable of. But he was not despondent about the state of the art at the present day, for he considered that there were distinct signs of vitality. Everyone had been delighted with Mr. Ball's paper. Amid the usual dry-as-dust text-book days it was refreshing to hear a lecture which attempted to penetrate into the inner meaning of architecture. Anyone who had tried would know the difficulty there was in conveying to others the feelings and impressions one has with regard to

building. The best training for a young architect was still the study of Roman architecture. Mr. Ball did not seem to have done justice to Bath as a really great conception; the city had genius in it. It was not only the first thing of its kind to be done in England, but it could hold its own with the lay-out of such a city as Nancy. They ought not to underrate what had been done in their own country. The paper was one of weight, and the attention of all students should be called to it.

The vote of thanks was then carried by acclamation.

Mr. Ball briefly acknowledged it, and the meeting terminated.

THE Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the Final Examination have been approved:—

Subject V.—Design for Art Gallery.—Messrs. H. Charlton Bradshaw, J. Carey, A. D. Clare, G. Davidson, A. E. Davidson, N. S. Dixon, W. E. Foale, E. Gee, F. Jenkins, T. T. Jenkins, S. Stevenson Jones, F. O. Lawrence, B. A. Miller, B. Newbould, A. N. Shibley, S. Soper, A. Thomson, W. H. Thompson, A. Wilson.

Design for a Village Church.—Messrs. H. R. Atchison, P. D. Bennett, Allan L. Freaker, H. J. Higgs, Robert M. Love, E. A. L. Martyn, F. James Maynard, A. Nisbet, A. J. Sparrow, G. E. Charlewood, H. W. Hallas, A. E. Lowes, Wm. Voelkel.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS v. REYNOLDS.

IN the Chancery Division on November 15, Mr. Justice Warrington had before him a motion in the action of the Royal Institute of British Architects against Reynolds.

Mr. Whinney said the action was brought for an injunction to restrain the defendant from using in connection with the business of an architect the letters R.I.B.A., either alone or in conjunction with any other description of letters, or from carrying on business in such a manner as to lead the public to believe that the defendant was a member of the Royal Institute of British Architects. He understood that the defendant did not now contest the matter.

Counsel for defendant agreed to treat the motion as the trial of the action, and to give a perpetual undertaking in the terms of the notice of motion and to pay the costs. He added that the defendant had used the letters inadvertently, and had no intention of offending again. His Lordship made the order accordingly.

NOTTINGHAM ARCHITECTURAL SOCIETY.

THE members of the Nottingham Architectural Society hung up their T-squares and put on festive attire on Tuesday, November 12, to celebrate the jubilee of the Society.

A conversazione was held at the Exchange Hall by kind permission of the Mayor of Nottingham.

The hall was attractively decorated, a special feature being the drawings of architectural work lent by the members; and the presence of the ladies formed an additional attraction.

During the reception by the President and Miss Sutton of the 130 members and friends, and while refreshments were being taken, Miss Hilda Baxter's Orchestra played a number of selections. Other local ladies and gentlemen who contributed to the enjoyment of the audience were Mrs. R. Duncalfe, Miss Muriel Vowles, and Miss Hilda Baxter and Mr. S. G. Walker, who had also arranged the musical programme. A feature of the evening was the dramatic recitations of Miss Tomalin, of London.

The concluding item on the programme was a farce, "Granny," with the following cast:—

Oscar Morris, a young artist ... Mr. Jack Macpherson.
Colonel Hammersley, his guardian ... Mr. Roger Duncalfe.
Mrs. Raltenshaw, a countrywoman ... Mrs. Andrew Oliver.
Maud Hammersley ... Mrs. Roger Duncalfe.

The special designs on the souvenir programme were the work of Mr. F. W. C. Gregory, a member of the Society.

The Presidential address was a review of Nottingham's architectural history during the last half century.

Mr. Ernest R. Sutton, F.R.I.B.A., said:—Ladies and Gentlemen,—The passage of time is a very commonplace theme, and every language is full of proverbs and wise sayings to aid us, no doubt, in making the subject even more hackneyed than it is. But the realisation of time's

progress is quite another matter, for the years go very silently, and it is only on those rare occasions, of which the present is one, that we suddenly become conscious of the fact that what we used to call the present has slipped into the historical past.

Fifty years ago to-night a few Nottingham architects met at the Public Offices by the kind permission of the Mayor, Richard Birkin, father of one of our most worthy citizens, Sir Thomas Birkin. At this meeting it was decided to create the Nottingham Architectural Society. From its very inception it was a fine healthy child, and found many admirers, and it began at once to make its presence felt in the world of Art and Science. In its earliest childhood it was the means of guiding and helping its supporters, and now, at the mature age of fifty, it has not only won the respect of the citizens of Nottingham, but is recognised by all as a Society of considerable influence. It is most gratifying to know that we still have with us three of the original members, Mr. Robert Booker, Mr. W. A. Heazell, and my dear father. It is impossible for us to quite realise what their feelings must be when they review the work the Society has so successfully carried out during the past half-century.

On the other hand, I should like to take this opportunity of expressing on behalf of the profession our appreciation and gratitude to those who were the original founders of the Society. The work was done in an admirable manner, and the foundations they constructed have proved worthy on which to build the prosperity of the Society. The Society was formed for the promotion of uniformity of practice and for the advancement of the profession of architecture and the various Arts and Sciences in connection therewith. I should like to point out that our Society also takes a leading part in all questions of social reform. Take, for instance, the Early Closing Bill, 1912. This matter was receiving the attention of our members as early as 1871, for I find on looking through the "minute book" that at a meeting held in April of that year the architects of Nottingham, on the request of the assistants and pupils, very generously agreed to grant a half-holiday one afternoon in each week—but they made this stipulation, that one clerk must remain in the office, so that it shall not be considered closed. Now let us take a hurried survey of our own city. It is a city we all love, and, if I may be allowed to quote the Bishop of Birmingham, "We all long for Nottingham to be in every sense an example to others, and it certainly is in many respects." I regret to say architecture can hardly be said to be one of its strong features; though we must not forget we have one grand masterpiece just outside the city boundary; I, of course, refer to Wollaton Hall, built in 1580.

And what of the progress and development of our city during the period under review? It seems difficult to realise that we had no electric installation for light and power until 1878. In November of that year it was first used for street illumination in the town on the occasion of an entertainment at the Mechanics' Hall, five lamps being utilised outside the building.

The old horse tram service was instituted in 1878, and six years later a steam tram was running to Basford; the electric car service was not introduced until 1901.

The first telephone communication in the city was established between the Castle Museum and the police station only thirty-four years ago.

It was not until 1881 that the University College came into existence, and was opened by the late Duke of Albany.

The School of Art was erected in 1863, and the Castle Museum was opened in 1878.

Our Society had been established six years when the High School—then known as the Grammar School—was removed from Stoney Street to the present buildings in Arboretum Street.

To return for a moment to our Society, as indicating its steady growth and usefulness, just permit me to remind you that since 1862 the membership has been increased from twenty-two to over ninety. Our first conversazione was held in 1864.

During the past half-century the Society has contributed £116 to the Benevolent Society, £25 to the Nottingham Art Society to promote lecture courses, and £44 3s. 4d. has been sent for the Victoria Hospital Fund, whilst many small sums have been subscribed from time to time to various charitable undertakings.

In the last fifty years we have witnessed many changes in the style of our architecture. In 1862 the Gothic revival was at the zenith of its popularity, and it received its death blow, as a style suitable for public buildings, on the completion of the Law Courts. At this time the pioneers of the profession turned their attention to our English Renaissance, reviving

the details of the architecture from Elizabeth and King James I. and all their varieties to the time of Queen Anne. Still later a mysterious style evolved, which gained for itself the collective title of "The New Art." Coming to the present time, we are now revelling in the Greek art in all its severity. Yes, during these fifty years we have been educating our taste in the historical styles, trying first one and then another, mixing them sometimes, and giving a Jacobean lining to a Georgian overcoat. What revival or new style shall we find when we turn over the next page of our history? Who can tell? We must "wait and see."

In the sphere of design—and I take it this is the proper sphere of architecture—there is a very marked change in the spirit that is abroad to-day compared with that which inspired or depressed the builder in the middle of the nineteenth century. We all know to what depths architecture had fallen; we cannot help knowing, for these buildings of the fifties and sixties will not die, and until a Society is founded with the express object of preserving them they assuredly will not be destroyed. But the very thoroughness with which the average Englishman turned his back on anything rational or graceful in design forced the few who retained some remnants of sensitive feeling into a camp of their own. The Gothic revivalists, these pioneers, did great things. Barry and Pugin raised the House of Parliament above the level of the Thames. Street essayed a bold composition at the Law Courts, and Gilbert Scott—though his love for mediæval design was often more destructive than protective of the work itself—built churches of not ignoble proportions or mean character. The effort of these men must be judged with due regard to the temper of the public and the opportunities of their time. The revivalists taught us that it was necessary to study proved masterpieces before we could form any artistic aspirations or seek to express them. Their gospel had to be preached before we could have Pearson's work at Truro, Scott's cathedral at Liverpool, or the fine conception of Bentley's Byzantine pile at Westminster.

But what of the men who have graced the ranks of the profession during the past fifty years? It would take long to recount to you all the deeds by which they have attempted to uphold the architectural standard, even if we confined ourselves to those who have fought and fallen in the first line. Many of the names will live and many more have interest for us in the fact that their personal efforts have laid the foundation for much that comes more easily to us to-day. One man was living in 1862 whose influence is still very much alive, is, indeed, greater perhaps than ever it was. His name was Alfred Stevens, and, though by profession a sculptor, he had a wonderful power in the design of architectural form. In 1864 J. L. Pearson built the church of St. Peter, Vauxhall, the first modern church vaulted throughout in brick and stone. Pearson was a great artist. Truro was fortunate to find in him the designer of its cathedral, and many of his churches, such as Daybrook, are well known for their fine proportions and delicacy of detail. It is strange to think that Sir Gilbert Scott was Pearson's senior only by six years, for he seems to have been connected more closely with an earlier period. Scott had done a large proportion of his work before the date of our foundation, and we must remember that Pearson outlived him by nineteen years. At this time Butterfield was still alive, and Ewan Christian, both builders of churches. George Edmund Street, the author of the ill-fated Law Courts, Sir Arthur Blomfield, and Alfred Waterhouse—the latter had a wide practice and left his mark in almost every large town, including our own city—these were all eminent architects who worked strenuously for a fine ideal. They were quickly followed by men of equal sincerity, though working in a different style—Nesfield, Mountford, Norman Shaw and others.

We come to men who are still practising, such as Sir Aston Webb, Sir Ernest George, Dr. Burnet, John Belcher, Reginald Blomfield, and their many colleagues; we feel that a delicacy of touch and loftiness of conception has been attained which were perhaps denied to the hard-worked business men of an earlier date.

There is, I think, little doubt that to-day we can build better than fifty years ago. Our materials are better, our cement clings more tenaciously, our bricks and tiles are better burnt, and our whole system of steel constructions has made the dream of 1862 a practical reality in 1912.

Timber is harder to get in seasoned form, but the world's markets have opened up to us an extraordinary variety and selection of materials, and for the best work the finest stuff is forthcoming.

But are we making better use of our wider opportunities than our predecessors, who worked without the use of the rolled steel joist, and who had not even the joy of the tele-

phone and the typewriter in their office? If there has been any failure on our part, I shall hasten to say that those last two instruments of torture are wholly accountable for it.

Both ancient and modern times have agreed to glory in architecture for its effects chiefly and for its methods of construction only in a lesser degree. And does not a principle which has held good for thousands of years appeal to so mature a Society as our own, which already boasts a jubilee? There is scarcely a modern movement that does not require our help to solve its practical difficulties or to invest it with importance and becoming dignity. And now even the Government is becoming interested and is cognisant of the value of our profession.

There are schemes innumerable to replan our towns and villages, to plant garden cities in all our centres of industry, and to teach men and women that their homes can be beautiful, their surroundings healthful.

Mr. John Burns, with his Town Planning Act, has set the official seal on a wide movement, and it will not be the fault of the architect if it does not lead to great results.

The increased activities of public bodies and the awakened interest in worthy buildings combine to give a wider opportunity than architects of the last fifty years have ever known.

And I sincerely hope that the Nottingham Architectural Society may witness a great revival in Art which shall eclipse its past history, and may Nottingham get a lion's share in the honour and the prizes.

Just one word to our junior members and to those who are about to join our ranks. See that you rally round the Society; keep your standard of efficiency high, and place your ideals on a lofty plane; see that the Society is never engaged in a selfish, mean, or ignoble battle. And when you unfurl the banner for inspection on the centenary celebration of the Society, may it bear scars only obtained in fighting for that which is worthy of a noble profession.

Mr. A. N. Bromley conveyed the thanks of those present to Mr. Sutton for his interesting address, and to those ladies and gentlemen who had so ably entertained them. They were sorry Mrs. Sutton was unable to be with them owing to illness, but her duties had been charmingly carried out by Miss Blanche Sutton.

The gathering was honoured by the presence of the Mayor and Mayoress of Nottingham, the President of the Sheffield Society of Architects, Mr. J. B. Mitchell Withers and Mrs. Mitchell Withers, the President of the Derby Architectural Society, Mr. Arthur Eaton, and Mr. R. C. Sutton, one of the original members of the Society.

SHEFFIELD AS AN ARCHITECTURAL CITY.

An instructive lecture on "Beauty in Architecture" was delivered by Mr. W. S. Purchon, A.R.I.B.A., to a large audience at the Sheffield University on Saturday night.

Mr. Purchon, whose lecture was illustrated with many of the finest examples, dealt exhaustively with many important qualities to be observed in architecture, such as unity of composition, points of concentration, symmetry, proportion, and scale, restraint of ornament and sculpture, use of materials, and the necessity for buildings to be true and genuine and suitable to their environment.

It might be asked what should be the citizens' relationship to architecture? Was it something about which they should read or travel long distances to see? Was it not, Mr. Purchon said, rather that which they, as dwellers in a city, should see all about them, in their public buildings, shops, factories, and even in their homes? It might perhaps be difficult to light the lamp of beauty in the peculiar atmospheric conditions of a manufacturing city.

He had heard it suggested, however, that the atmosphere of Sheffield could be improved, and he should not be surprised to find that that was quite possible in these days of engineering efficiency. Most of them would welcome such an improvement. Would it not be worth much to them if Sheffield was a city free from shams and ugliness, a city in which all the streets and buildings were pleasant to the eye and mind?

At the present time a visitor to Sheffield, when asked how he liked the city, invariably replied that the country around it was beautiful. Would the visitor of the future, the lecturer observed, ever be able to say it was a beautiful city with beautiful surroundings?

That was not an impossible ideal. It needed, chiefly on the part of the people, a great love of, and a great desire for the beautiful.

When they as a people were as interested in the beauty of their buildings as they were in sport they would not tolerate ugly cities. Street improvements would no longer be considered only as problems concerned with traffic and the provision of sewers and water mains. The builder of a private house would remember that it was not only for the comfort of himself and his family, but that it was something which would give either offence or pleasure to countless passers-by. That state of things was slowly but surely coming. Already large numbers of people were becoming interested in such questions as town-planning and the provision of garden cities, and incidentally in beautiful buildings.

SHEFFIELD SOCIETY OF ARCHITECTS. AND SURVEYORS.

MR. F. H. WRENCH, A.M.Inst.C.E., delivered a lecture on "Surveying" at the University to members of the Sheffield Society of Architects and Surveyors. The chair was occupied by the President, Mr. J. B. Mitchell Withers.

Mr. Wrench described some of the instruments used and the methods adopted in surveying, and he dealt with the exploration survey made by travellers in an unmapped country, topographical surveys, those surveys made for boundary and jurisdiction purposes, and those made for engineering or constructional purposes. To get over difficulties in the art of sketching, photography had been introduced in many classes of work, and this had proved most valuable. The plane table was hardly ever used in this country, probably because the ordnance survey had done much of the work for which this instrument was most useful. But with this instrument remarkably rapid surveying was done. For rough work the student could easily make his own plane table. A method practically unknown in England, very useful to explorers, was the phototheodolite, with which some excellent work had been done in Canada among the Rockies. The best results with the camera were only obtainable in treeless districts, where an extensive panoramic view could be secured.

Mr. Wrench exhibited a number of surveying instruments, including the latest Zeiss level, and he also showed samples of survey work carried out in most of the principal countries of the world.

ILLUSTRATIONS.

PEMBROKE COLLEGE, CAMBRIDGE.

THE drawing of a book-case in the library of Pembroke College was made by Mr. E. H. Gibson, on his tour as holder of *The Architect Travelling Studentship* for this year.

BAPTIST CHURCH AND SCHOOLS, PINNER.

THESE buildings have been erected in the Paines Lane, Pinner, and comprise a church with seating accommodation for 500 and a school for 300 children. Externally the walls are built of a dark red brick with Bath stone dressings, and the roof covered with sand-faced Bedford tiles. Internally the joinery is of pitch pine throughout. The buildings include a lecture hall, minister's and deacons' vestries, kitchen and lavatory accommodation. The school hall is divided into separate class-rooms by folding partitions. The contract amount for the whole scheme was £4,318, which was carried out by Messrs. C. Brightman & Son, builders, of Watford, from the designs and under the superintendence of Messrs. Spalding & Myers, A.A.R.I.B.A.

COTTAGE AT BENFLEET.

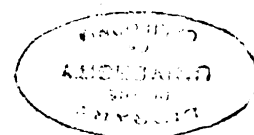
THIS cottage, of which Mr. Arthur T. A. Bowyer is the architect, was erected some few years ago, and contains two sitting-rooms, three bedrooms, bathroom, &c.

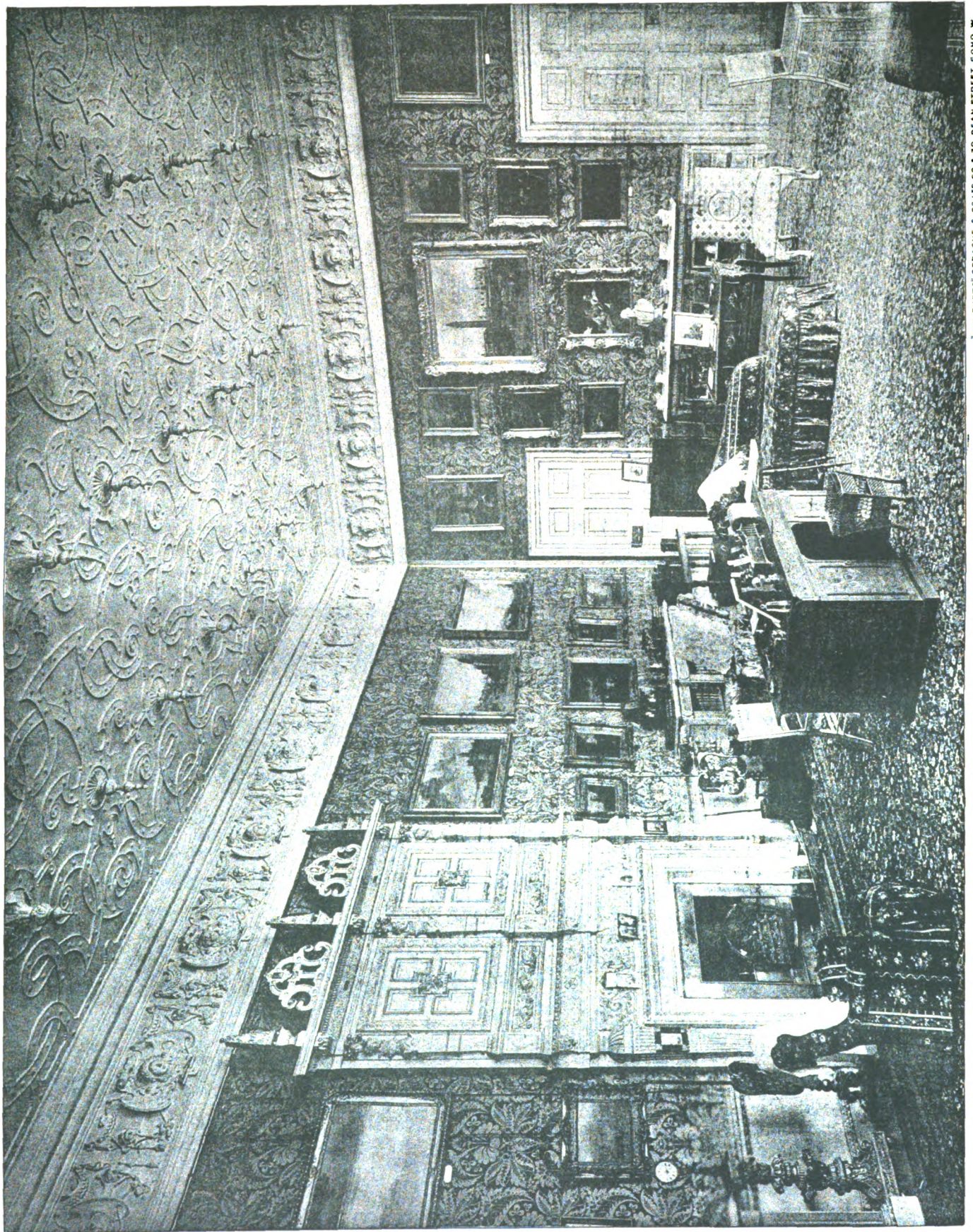
AUDLEY END, ESSEX.—KNOWLE, KENT.

THE photographs we reproduce are in further illustration of work described by Mr. A. E. Bullock in his series of articles on "Interior Decoration."

THE Goole Urban District Council last week formally agreed to proceed with the erection of a town hall at an estimated cost of £7,630, in preference to erecting municipal offices.

THE Lancashire Education Committee have decided to provide new elementary schools at Fleetwood, Horwich, Waterloo (Ashton-under-Lyne), and Whitworth, to replace schools taken over from the voluntary authorities.

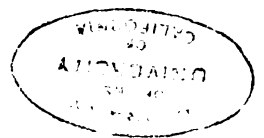


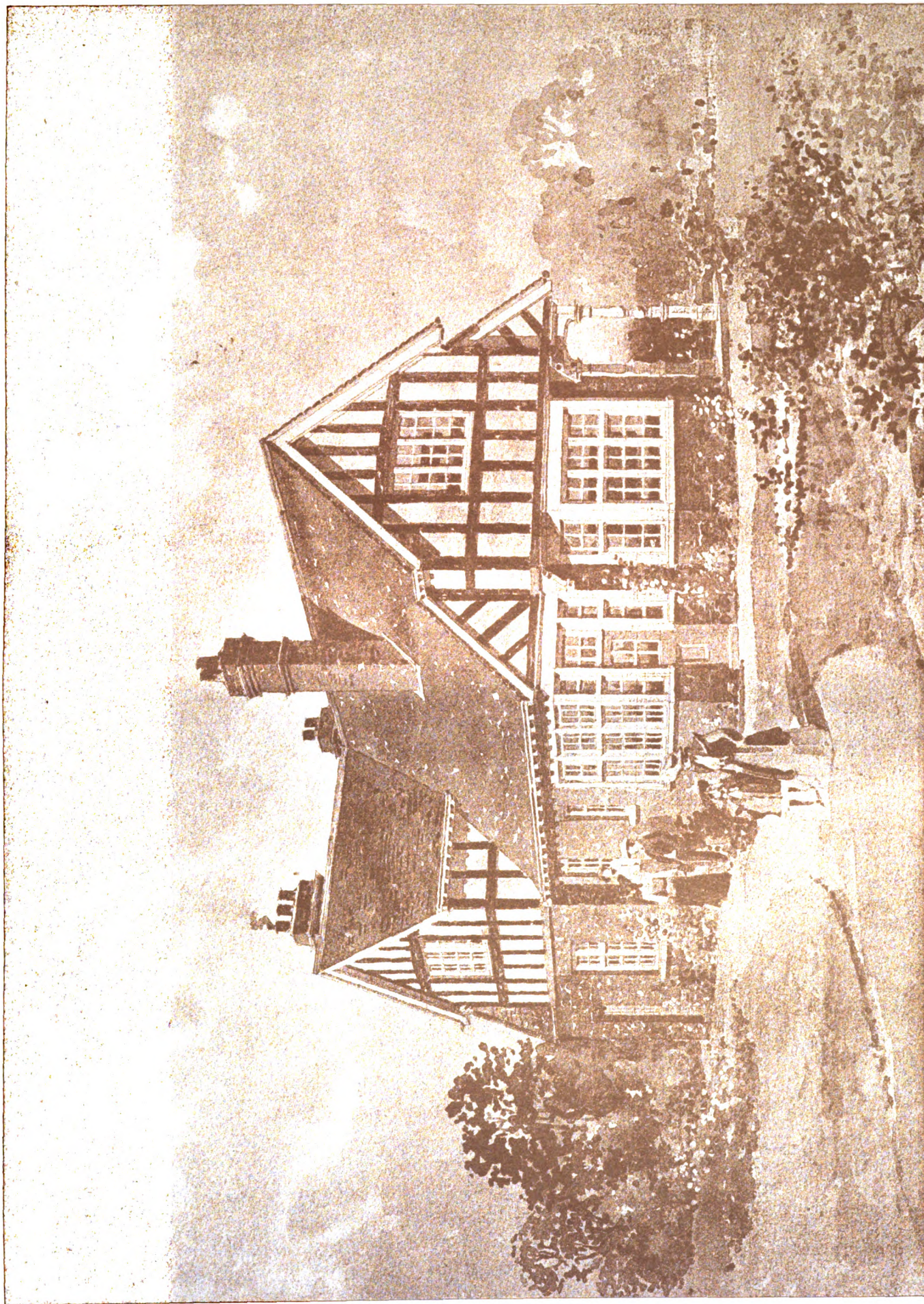


"INK- PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

AT AUDLEY END, ESSEX.

AT AUDLEY E...





INK PHOTO SPRAGUE & CO. L^{ts} 69 & 70, DEAN STREET, SOHO, W.

COTTAGE AT BENFLEET, ESSEX.

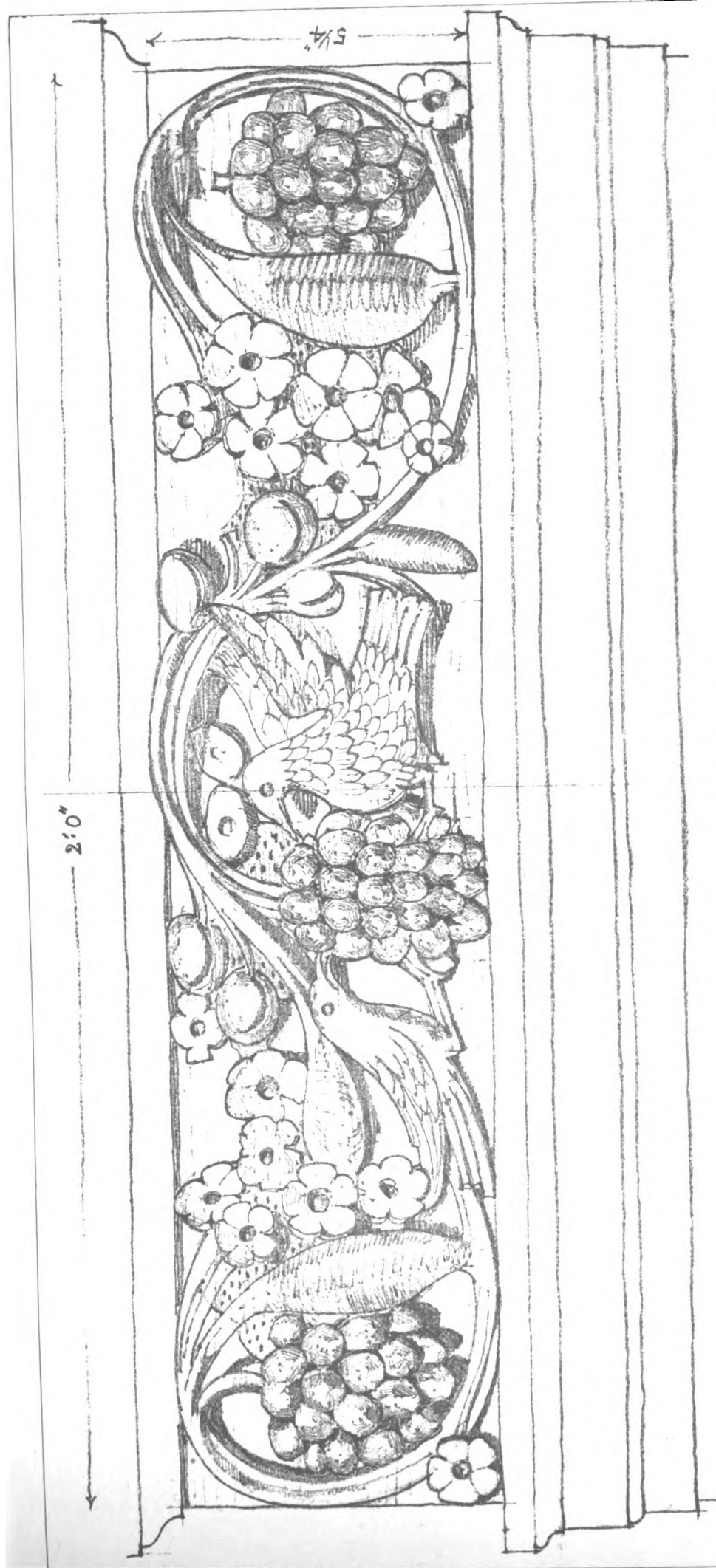
Mr. T. A. BOWYER, Architect.

MR. T. A. ROWE, ATTORNEY
JENFLEET, ESSEX.



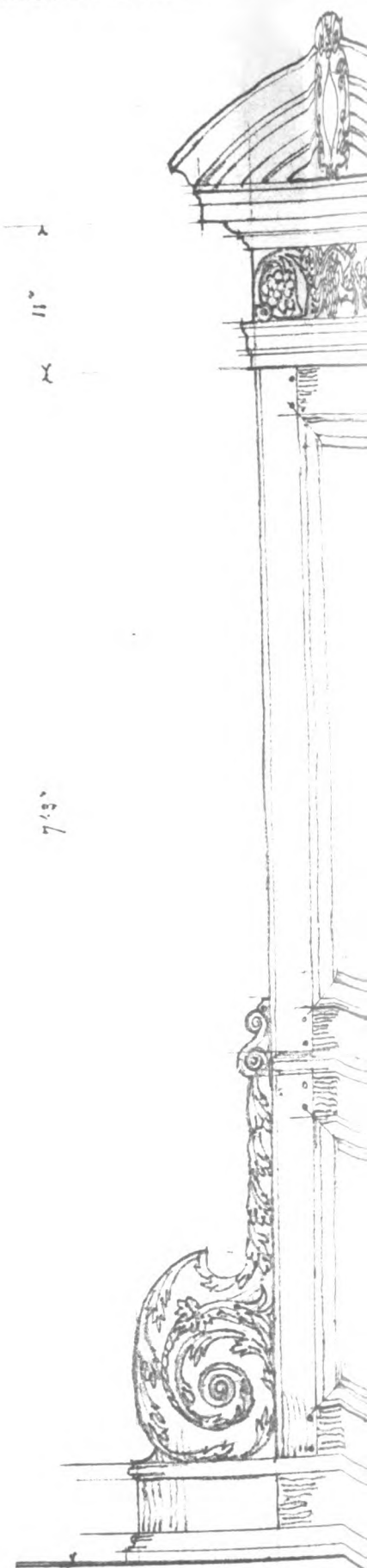
PEMBROKE COLLEGE, CAM

BOOKCASE IN LIBRARY



DETAIL OF CARVING

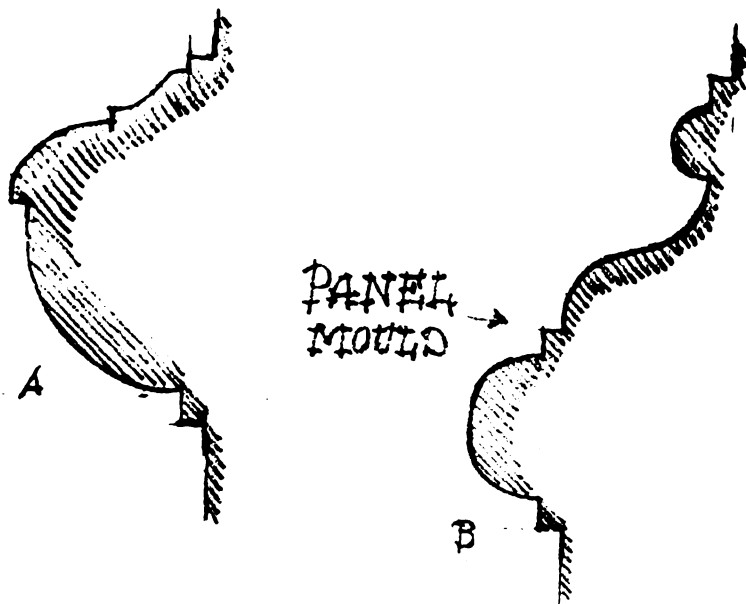
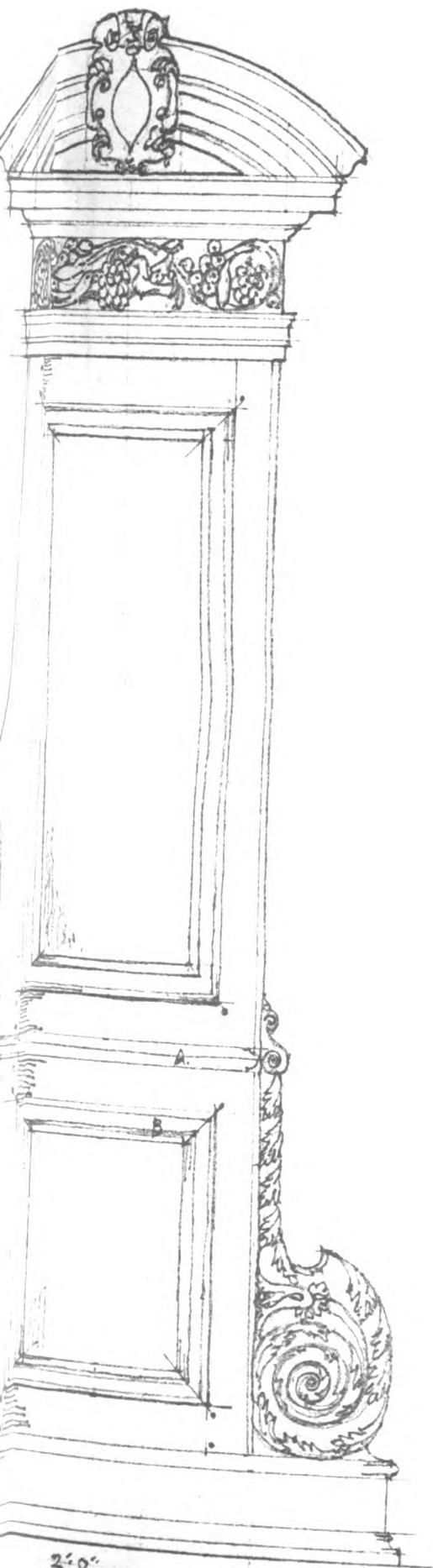
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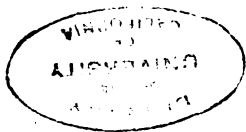
Cambridge.

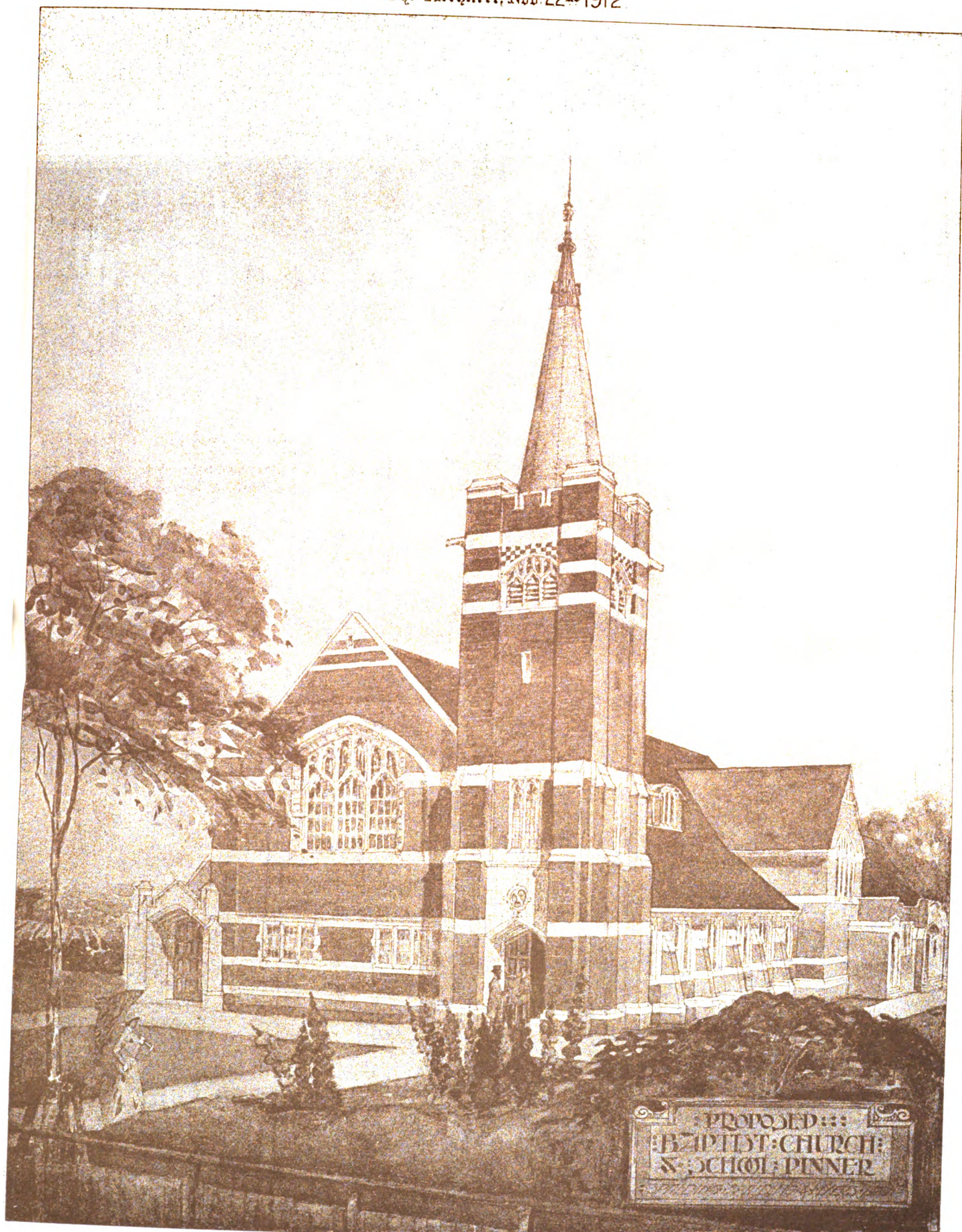
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DETAIL OF CARTOUCHE *W. Gibson.*

Sept. 1912.

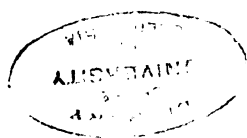


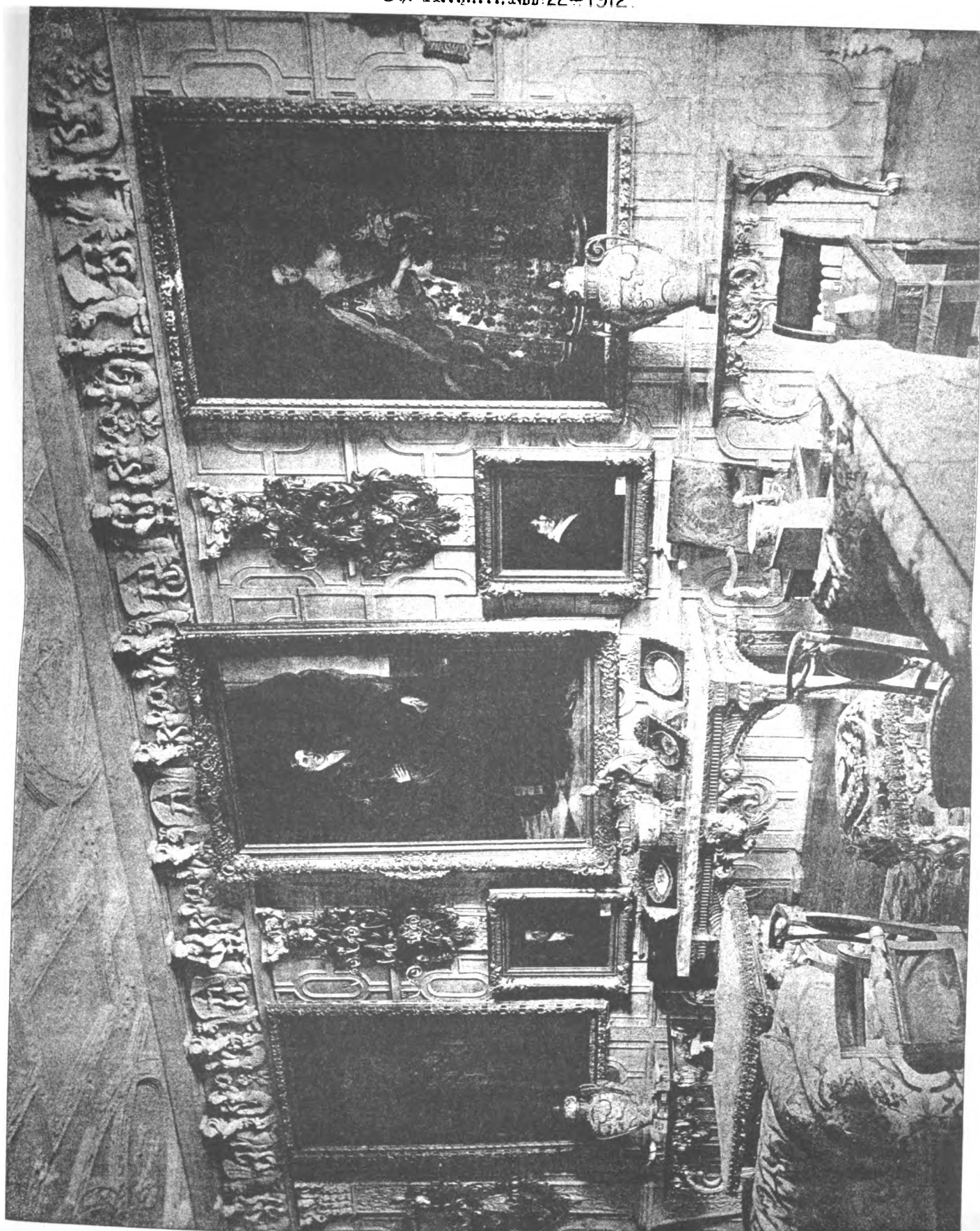


"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

PROPOSED BAPTIST CHURCH AND SCHOOL, PINNER.

Messrs. SPALDING, SPALDING & MYERS, Architects.





THE PHOTO SPRAGUE & CO. LTD. 69 & 70 DEAN STREET, SOHO, W.

IN THE BALL ROOM, KNOWLE, KENT.



THE ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of the Architectural Association was held on Monday, the 11th inst., Mr. Gerald C. Horsley, President, in the chair.

It was announced that on the 28th inst. an exhibition of sketches will be held in connection with the Camera, Sketch and Debate Club, when criticisms will be given by eminent artists.

The President announced the election of Mr. R. B. Carruthers, Regent's Park, N.W., and Mr. Kozo Kitamura, of London.

The election was unanimously agreed to of Mr. W. G. Newton, M.A., as Hon. Librarian, and of Mr. H. M. Fletcher, M.A., as an Ordinary Member of the Council to fill the present vacancies.

A vote of thanks was passed to Mr. T. H. Watson for presenting 233 slides to the Association.

Mr. J. A. Marshall then read a paper (of which we give an abstract) on

Marbles Used in Greek, Roman and Byzantine Buildings.

Apart from its utility, marble has an inherent and mysterious beauty that appeals to everyone, and especially to those who can study its infinite variations in the light of modern geology. The sparkling fracture of white marble interested the ancient Greeks, but they did not know, as we do, that the minute cleavage planes or facets that cause the lustre denote a molecular change in the structure of ordinary limestone. We are told by geologists that this change has been produced by "pressure metamorphism," a high-sounding term, implying that the crust of the earth is mobile, and subject to crumplings, foldings, squeezings, shearings, and other ailments, mostly very insidious in their attacks.

By this gentle treatment sedimentary rocks, such as limestone, can in the course of ages be altered beyond all recognition; what was once a limestone mud becomes a hard crystalline rock by pressure, friction, heat.

It is known that crystals develop according to the freedom given them, and to the length of time they are under the influence of the forces that produce them. In a compact rock like simple marble, where the crystals have not had room to develop, there is merely a confused aggregation. Most crystalline marbles, when seen in a large way, bear evidence of the flow or movement to which the material was subject before it crystallised or became firmly solid; the lines of disturbance are perpetuated by folia, streaks, or veinings, that sometimes represent the thin beds of clay, shale, or other impurities with which the original limestone was interstratified.

It is not uncommon for marbles to show "faults"; this is a geological term applied to rocks that have been split in a direction opposed to the veining, and, after having slipped, had again become united. In some of the strongest marbles the only evidence of the rupture is a sudden break in the continuity of the veining; the scar itself has healed so perfectly, by a mysterious process of chemical secretion, that the strength and homogeneity of the mass are not in the least impaired.

The traditional forms of classical Greek architecture demanded that marble should be used in massive blocks, so that it expressed the construction, without being, in the ordinary sense, a decorative material; applied decoration was provided by sculpture and painting. This being so, we can understand why, in the classical age, the Greeks, preferred the white marbles of their country to the variegated species. The latter, so much sought after by later generations, were never thought of while the art of Polygnotos flourished, and they were utterly incompatible with Hellenic building construction and design.

Before the Persian invasion common limestone was mostly used for building purposes in Greece; this applied even to Athens, although that city is only a few miles from an unlimited supply of the purest white marble.

Later, during the years of comparative peace, the statesman Pericles gave to the public buildings of Athens a crystalline aspect that made the city the most magnificent in Greece. It must not, however, be supposed that this emphatic choice of marble was entirely independent of precedent, any more than the surpassing genius of Phidias, Ictinus and Mnesicles was spontaneously developed for the occasion. Long before the time of Pericles marble was used for a part of the Temple of Apollo, at Delphi, and for parts of the Temple on the island of Ægina.

For the consummate work of the Periclean period, in Athens, the white marble of Mount Pentelicos was exclusively

used. Though brilliantly crystalline, this marble is intercalated with thin seams or ribbons of greyish mica shale, liable to disintegration more than the harder parts. When exposed to the weather that mellow tint comes which all travellers admire who visit the ruins, grand and beautiful in their desolation, on the Acropolis at Athens. In the British Museum the student will find the structural peculiarities of Pentelicon marble clearly indicated by the scarred and furrowed fragments from the Parthenon.

The bluish-grey marble of Mount Pentelicos that overlays the white was not much used by the Greeks, but five miles nearer Athens, on Mount Hymettos, they quarried a white marble streaked with grey. The grey veining—straight, nebulous, or jagged, according to the direction in which the blocks are cut—was, perhaps, not greatly valued by the Greeks, and when the marble was used for statuary, during the archaic period, no doubt its natural markings were concealed by decorative painting.

Some years ago an inscribed slab of Hymettian marble was found, which proved to be the specification for building an arsenal at Lea, the principal war harbour of Athens. A Greek named Philo was the architect, and the date of the inscription is about 346 B.C. There are no remains of the building, but we learn that the walls were to be of local limestone; the vestibules were to have independent ceilings of Hymettian marble, and thresholds of the same material; the doorways were to have lintels and linings of Pentelicon marble; the columns were to be constructed of seven drums of Hymettian, while the capitals were to be Pentelicon.

The most beautiful of white marbles is that of Paros, where it occurs on Mount Marpesius, between beds of grey, in shallow streams, limpid and brilliant. Out of it were fashioned many masterpieces of Greek sculpture and thousands of roofing tiles for the temples of Greece. The Athenians built a Treasury of it, by the Sacred Way at Delphi; so did the Siphnians; and later some of it was used for the monument of Prince Mausolos of Caria.

An early instance of the use of marble was the Temple of Apollo at Delphi, built 530 B.C. It was agreed that this temple should be built entirely of local limestone, but, according to Herodotus, the contractors won a reputation by using Parian marble for the columns of the façade, and declining to make any claim for the "extra."

The archaic pedimental sculptures from the Æginetan temple are of Parian marble, but, as these were partly painted, we may conclude that the material was used in this instance not merely for its intrinsic beauty, but because it was most suitable for figures possessing a certain slenderness and tenuity, reminiscent of work in bronze.

The little Treasury of the Athenians at Delphi, built just after the battle of Marathon, is, like that of the Siphnians, an invaluable example of Attic art at the time of its transition into the perfect work of the fifth century. It is interesting to note that the sculptured metopes of the frieze are of the finest white variety of Parian marble, while the triglyphs are of the grey and coarser kind.

The Romans by their conquests had facilities which they could not resist for obtaining marble from all parts of the known world. They eagerly quarried and sent to the capital of their empire not only the simple whites and greys of Greece and Italy, but also the coloured marbles disregarded by the Greeks; and it is chiefly to their enterprise we owe our knowledge of the finest species.

Like the Greeks, the Romans were accustomed to build with enormous blocks of common stone and white marble, but they found the process slow and costly, and the builders of the empire practised another, less expensive and more rapid, besides being more daring in conception and lasting in its results. The use of concrete and brick called for decoration that could be applied, and as the idea of applying the "Orders" to façades, in connexion with the fenestration was probably derived from the Hellenistic cities of Asia Minor, so perhaps we may accept the suggestion of the elder Pliny that the Romans derived the art of using thin slabs of marble for decoration from the same cities.

From Pliny's account it seems clear that the introduction of foreign marbles into Rome was not due to a desire to embellish some sacred edifice or public building, but rather to gratify the private interests of certain officials of the State. A certain Lucius Crassus, when he came into office, saw an opportunity of getting some marble columns over from Greece which he wanted for his house on the Palatine. The use of this material by a private individual was certain to be deprecated as savouring of Greek luxury; so, to put a fair complexion on the matter, when the columns arrived they were first "offered up" in the temporary theatre as a

decoration or background for the stage. The columns were next seen erected in the *atrium* of his house, half a dozen of them, 12 ft. in height, the first monoliths of Hymettian marble imported into Rome.

This happened about 91 B.C. Later, about 58 B.C., another rich *edile*, Æmilius Scaurus, with the instincts of a millionaire and a great fancy for columns, imported 360 that were quite black. For nearly a month these supported the upper storeys of a temporary theatre, and then the largest of them, 38 feet in height, were carted away by Scaurus to the Palatine for the *atrium* of his house.

A military engineer, called Mamurra, was the first person in Rome who covered the whole of the walls of his house with marble, and who had all the columns of solid marble from Carytus and Luna. This was about 48 B.C.

The white marbles of Luna and Athens were used impartially by the Romans for columns, entablatures, and wall linings. Hymettian marble was used for paving the *peribolus* of the Temple of Faustina, in the *Forum Magnum*; and antique columns of this marble, fluted and unfluted, are to be seen in the churches of S. Sabina, S. Pietro in Vincoli, and Sta Maria Maggiore.

Excepting the grey and black marbles, most of the coloured species known to the Romans have been identified; they were named after the places they came from. The quarries belonged to the Emperors, and in the course of time the number of convicts employed in them became so great that in Trajan's reign a special administration had to be formed to look after them. The blocks, before being shipped off, were usually numbered and frequently marked with the name of the reigning Emperor and that of one of the officials in charge of the quarry. Shiploads of marbles were continually being sent from the ports of Greece, Asia, and Africa. To convey monolithic columns and obelisks vessels of enormous size were specially constructed. It is now impossible to realise the quantity of marbles sent to ancient Rome, but it impresses one to know that there is scarcely a church or a palace without columns and wall linings taken from the ruins of the cities. Then we must not forget that enormous quantities were burnt into lime in the Middle Ages, and broken up for concrete, and the hard white stucco used by the architects of the Renaissance.

The coloured marbles used by the Romans are not only more complex than the marbles used by the Greeks, but there are so many varieties of each species that the mere accident of colour cannot be taken as a standard for classification by the student. The coloured marbles may be placed in three groups—firstly, the foliated and schistose species, in which the *folia* are sharply defined by colour; secondly, those species that exhibit both the spathic and the brecciated structure; and, thirdly, the true breccias that seldom degenerate into a streaky formation.

Next may be grouped together three species in which the general structure may be described as a condition between the spathic and the brecciated; both conditions may be present in the same mass, or either altogether absent. The marbles are the *Marmor Numidicum*, from Simmitu Colonia, near Tunis; the *Marmor Chium*, from the island of Chios; and the *Marmor Scyrium*, from the island of Scyros.

Marmor Numidicum.—This yellow marble was greatly prized by the Romans, if we may judge from the quantity found in Rome and from the frequent allusions to it by the classic writers. It seems to crop up everywhere, from the sacrificial depths of the Heroon of Romulus to the enormous rubbish heap of Mount Testaccio. Besides columns it was used for wall decoration and pavings in connexion with other marbles. The primary colour of this calcareous rock was a creamy-white, but the presence of iron has deepened this to crocus colour, rose and purple.

When Hadrian visited Africa he constructed a road from the quarries to Tebarca, on the coast, whence the marble was shipped to Rome. With the close of the Roman Empire the use of this marble for columns seems to have died out, and it was not revived during the Byzantine period, although the marble continued to be used sparingly for inlay.

Marmor Chium.—The marble of Chios, one of the Ionian Islands, was known as early as the fourth century B.C. to the Greek philosopher, Theophrastus. This marble is not an easy one to describe, so manifold are its variations; and its nondescript character is shared by several kindred species. From the very early notice of *Marmor Chium* by Theophrastus, and the fact that the walls of Chios were built of it, Pliny concluded that variegated marbles were first discovered by the people of Chios. This may simply mean that the builders of the walls availed themselves of the materials nearest to hand, but when the rain brought out the tints the

delighted inhabitants showed the walls to every body as something quite new and magnificent.

Marmor Scyrium.—The marble of Scyros is also perplexingly varied, both in structure and colour, as anyone may see while taking refreshment in some of the popular tea-rooms of London; and, although the quarries were once imperial property, the material cannot be said to possess the unfailing stamp of nobility that distinguishes the species already described. The white ground and the colour contrasts are often harsh, and the stone is brittle.

According to Strabo, monoliths and large slabs of Scyrian marble were to be seen in Rome near the close of the first century B.C., and it became so fashionable there that the price of white marble greatly declined.

Marmor Synnadicum, perhaps the most beautiful marble known to the ancients, deserves to stand alone. The quarries are at Docimium, a village thirty-two miles from Synnada, in Phrygia. Strabo records that only small blocks were extracted at first, but in his time larger blocks were got as translucent as alabaster; and, although their transport to the sea was difficult, yet columns and slabs of stupendous size and great beauty were sent to Rome. Rough blocks have been found with inscriptions dating from the time of Augustus to that of Marcus Aurelius, and from this time onward the quarries supplied Rome until the division of the Empire, when the exportation of the marble was diverted to Constantinople.

Marmor Atracium.—The green serpentinous breccia from Atrax, in Thessaly, is well known by its Italian name, Verde antico. The earliest description of it is by a Christian writer of the sixth century, and its introduction into Rome was probably late. The main constituent is serpentine, mixed with carbonate of lime.

"*Breccia Africano*."—One of the most interesting and noble-looking of the breccias of antiquity is known to the Italians as "Africano," though the ancient quarries have not been discovered. When excavating the site of the Basilica Æmilia, Signor Boni found fragments of "Africano" columns 3 ft. in diameter, that belonged to the nave, while a corresponding series, smaller in size, belonged to the upper storey. According to Pliny, the columns of this basilica were of Phrygian marble, so it was quite a surprise to find that, in the course of time, they had, by some mysterious process, changed into "Africano." From this discovery it would seem that Pliny, like many of the nostrums to be found in his encyclopædia, was not infallible. The modern name, "Africano," is merely an indication of the dark colour peculiar to this breccia.

At the end of the second century A.D., Rome was becoming richer in many costly marbles, and probably "Breccia Corallina" was one.

Marmor Celticum.—Among the later arrivals we must place the *Marmor Celticum*, first described by our Christian writer of the sixth century. The marble came from the western limits of the Empire, and is believed to be identical with the black and white breccia found in Southern Gaul, on the northern slope of the Pyrenees.

Marmor Taenarium.—This name is generally understood to include two species, a red and a black. The red, popularly known as "Rosso Antico," has been identified with a species found in the southern part of Laconia, near the promontory marked "Taenaron" in the classical atlas. Taenarian marble is mentioned by several of the classical writers, and, according to the Greek geographer, Strabo, the quarries were ancient in the first century B.C. The red Taenarian marble of even colour and close texture, and so frequently met with in the museums, was selected by the Romans for the mouldings of internal decoration, and for statuettes and small reliefs. This typical variety of "Rosso Antico" could only be got in comparatively small pieces.

Marmor Alabastrum.—Historically considered, alabaster as a decorative material is more venerable than marble; this is mainly due to the fact that the earliest civilisations happened to be in countries where marble was scarce or unknown; while alabaster was plentiful. Apart from its well-known use by the Egyptians and the Assyrians, it was found in the prehistoric remains of Orchomenos, Mykenæ and Crete. The colossal winged figures from Assyria in the British Museum are impressive examples of brecciated gypseous alabaster. Many columns and fragments of the Oriental banded kind, ranging from the colour of honey to that of dark treacle, have been found in Rome.

The question as to how the Romans used marble for decoration will naturally occur to you. Unfortunately, the evidence of existing examples is practically wanting; a few columns and fragments of architraves, skirtings, and pavings

are all that remain *in situ*, and it is probable that even some of these vestiges belong to late restorations. If we turn to Pompeii we shall find still less of actual marble decoration, though an echo of it may be seen in some of the mural paintings. When the city was hastily restored after the earthquake of A.D. 63, the readiest methods of decoration—stucco and painting—were adopted. There are very few marble columns in the city; like the walls, the columns were generally stuccoed and painted. The painted decoration is often a reflex of marble incrustation. This sometimes suggests work of the *opus sectile* type, especially in the case of the low dado, which retained the severity of style derived from a marble prototype often when the upper part of the wall was treated in that light and fantastic manner popularly known as "Pompeian."

In Rome itself, from the early days of the Empire, marble was gaining an ascendancy over painting.

Pliny laments that in his day the art of the painter was giving way to that of the marble-worker; "for not only," he says, "are walls now covered with marble, but the marble itself is carved out or marquetted to represent objects and animals of various kinds."

Seneca asserts that the bathers of his day would consider themselves shabbily treated unless "the walls shone with large and precious roundels; unless on every side laborious and varied inlay, like a picture, did not border them."

Undoubtedly, of all the public buildings of Rome, the *Thermae* presented the most splendid examples of marble decoration, though the best preserved of these show scarcely anything now but bare brickwork and concrete.

Splendid as it must have been, the decoration of the *Thermae* of Caracalla and of Diocletian represented a craving for luxury and wealth that ultimately deprived the Romans of all powers of refined appreciation. In the Baths of Caracalla some of the paving was formed of thin slices of porphyry and marble cut to patterns, with flowing lines and leaf-shaped ornaments, an elaborate form of *opus sectile*.

Little as we know about their marble decoration, and unrestrained as some of it probably was, we may conclude that the Romans did not fall into the modern error of associating it too intimately with joinery; the æsthetic law of contrast in this connection being, no doubt, complied with by the use of textiles and brodered hangings.

In the fourth century A.D. decorative art in Rome had reached its lowest level. At the beginning of the century Maxentius, the rival of Constantine, began that great Basilica in the Forum that was probably finished by the Christian Emperor. According to Professor Lanciani, the eight columns of white marble that ostensibly supported the vault came neither from Greece nor Italy, but from far-off Proconessus, an island in the Propontine Sea, near Constantinople. The columns were fluted in the classic manner, and one of them now stands as a lonely outcast in the Piazza de Sta Maria Maggiore. The marble when fresh is bluish-white; it is coarsely crystalline and banded with a pleasing grey of various shades. There is no other instance of its use in Rome, and it would be interesting to learn how it came to be used for the Basilica.

From the time of Constantine Proconnesian marble became as important to the builders of the Eastern Empire as the white marbles of Greece and Italy had been to the builders of the Western.

The first churches followed the simplest type of pagan basilica, in preference to the grander type exemplified by the Basilica of Maxentius. The simpler type, with a colonnaded interior, just sufficient to support a wood roof, was easily and quickly erected, especially when the columns were taken, as they often were, from some dismantled building of pagan Rome. Of these early churches in Rome very little is left beyond the columns.

At Ravenna, in the fifth and sixth centuries, decadent Italian art was infused with "a ray of beauty from the East."

Among the marbles to be seen in the Ravenna churches the white with grey veining, from Proconessus, is most prominent, but another favourite for bands and panels was a strongly marked red-and-white foliated species. It is popularly known as red "cipollino." The marble was also used at the same period in Constantinople.

Apart from the Proconnesian columns of the nave arcades and fragments of ambros and parapets, very little of the marble decoration is left in the basilicas of Ravenna, but the aisles and apses generally had a dado of the material.

(To be concluded.)

THE NORTHERN ARCHITECTURAL ASSOCIATION.

THE opening meeting of the session was held on the 13th inst. at 6 Higham Place, Newcastle-upon-Tyne.

After some preliminary business, Mr. Wm. Milburn, F.R.I.B.A., delivered his Presidential address. He appealed to all those who practised architecture in the district to come into the ranks of their Association, and then touched upon trade matters. The great depression of the past few years in the building trade was just beginning to lift. He did not remember a depression which had lasted for so long, and had it not been for the activity in school building in the counties, and house building in the colliery districts, workmen would have had a very bad time indeed. As it was, many artisans had gone to the Colonies, and large numbers were now employed in shipyards.

Dealing with house and town planning, Mr. Milburn said he felt this to be one of the most difficult problems of the present day. Whilst they welcomed garden cities and the better planning of the newer portions of towns, they must remember that the houses vacated by the people who removed to the suburbs were now in many cases let into tenements, so that whilst provision was being made for those who were able to live in healthy surroundings, the centres of some towns were becoming more densely populated, and people were living in houses badly adapted for tenements.

"Something had to be done to better the dwellings of the poor," continued the President, "and I think that we have started fairly well; but we must face the fact that the life of a large portion of our slum properties is nearly run out, and that although they are being put in order as quickly as possible, owing to their age, and, frequently, the rough usage of careless and dirty tenants, better habitations for the poorer classes will before long have to be provided. To my mind, it will not be done by the class of properties which some of the city and town Corporations have frequently erected in the past; such properties are much too expensively constructed to allow of reasonable rents being charged, are not sufficiently home-like for the people who live in them, and have frequently become a serious charge on the rates."

"Improvement schemes are generally costly undertakings, not only so far as the purchasing of property is concerned, but also in the provision of dwellings for the displaced inhabitants by the building of new tenements, which very often have to be constructed with more storeys than the houses they displace, owing to an increased area being necessary for streets, &c. The housing schemes in the rural areas are doing much to meet the demand for healthier homes, but such houses can only be occupied by the fairly well paid artisan, the poor being left behind in the slum areas. Of course, we must admit that a considerable amount of the property in the lowest-class areas is what the tenants have made it, and, however a landlord may try to improve his property, he is not always able to choose his tenants, and I do think that whilst the authorities are dealing firmly with the landlords they should perhaps be a little more strict in enforcing their powers on some tenants."

"As to the remedy, we have the difficulty of first cost and returns to face, as well as the education of the people to live in better surroundings; and if they get into better surroundings and better houses, in many cases there is a difficulty of getting the tenants to keep the houses in order. Whoever takes this question in hand has a very difficult problem to solve; each town or district would have to be dealt with on a separate and different basis, as the areas available for improved dwellings in one town may be much more prescribed than those available in another town, thus necessitating different laying out of streets and planning of houses. Then, again, however much we would like it, it is quite certain that we cannot convert a slum district into a garden city, or clear the whole of the old property from a given area and build new houses without first counting the cost."

"I am of opinion that it might be advisable to expend some of the money now spent by the State and ratepayers on education over better houses for the poor. I do not advocate the neglect of education, but I think the housing question is in many respects of equal importance, because we cannot expect to see healthy children attending school when they are brought up in the gutters, as I am sorry to see hundreds of them are."

Passing on to deal with the provision of sanatoria under the Insurance Act, the President observed that if better living accommodation existed for the poor there would not be so much need for sanatoria. They, however, welcomed the provision in the Act which gave them State aid for the erec-

tion of such institutions. The planning of those buildings would, of course, call for special thought and study by the architects employed.

Mr. Milburn also dealt with the necessity for registration in the architectural profession, and expressed the hope that the Institute would bring it to a successful issue. If the profession were a body acknowledged by law it would be an inducement for more universities to establish Chairs of Architecture.

On the motion of Mr. R. Burns Dick, seconded by Mr. H. C. Charlewood, the President was thanked for his address.

The drawings and sketches made by Mr. A. E. Lowes, the Glover student, during his recent tour, were on exhibition in the Library after the meeting.

FRENCH RENAISSANCE ARCHITECTURE.—VI.

In the sixth lecture of the course on French Renaissance Architecture being delivered at University College, Gower Street, W.C., Mr. W. H. Ward, M.A., A.R.I.B.A., dealt with "The Growth of the Grand Manner and Barocco Palladian Compromise—Early Style of Louis XIV."

In his previous lecture Mr. Ward had shown that the architecture of the earlier part of the seventeenth century in France was largely a vernacular and utilitarian architecture only indirectly tinged with Classical tradition, somewhat heavy in its proportions, much addicted to the use of brick and rustication, and in decoration to the coarse and grotesque manner of the Flemish barocco. But there happened also a revival of the study of Classical models, and a line of distinguished architects began feeling their way to a monumental and characteristic type of architectural expression. This refining process was continued in the reign of Louis XIV.

The reign of Louis XIV. lasted for seventy-two years. Both its political and architectural history might be divided into the three stages of growth, culmination and decline. In the years of Mazarin's rule the greatest architectural achievements were in the town and country houses of great nobles and officials. By the first years of Louis' personal reign the Crown had attained such success in its struggle against the feudal and legal aristocracies that the powerful forces of architecture were concentrated upon royal palaces like the Louvre and Versailles, and upon imposing public works. In the later years of this record reign the royal undertakings ceased to be so all-important, and became rivalled in interest by private buildings.

Mr. Ward concentrated his attention on the first of the three stages. He showed the classicising, simplifying, and unifying process at work, and the growth of the "Grand Manner." Three points, he said, indicate the change in progress. First, there are attempts to bring more of the Classical feeling for unity and repose into the composition; secondly, the orders and other elements of Classical design are more correctly and reticently used; thirdly, decoration becomes more refined. A leading spirit was François Mansart, who designed such typical fastidious works as the Hôtel de la Vrillière, the Château de Maisons-Laffitte, and the remodelling of the Hôtel Carnavalet in Paris (1661). Two important Parisian houses of the period are the Hôtel de Beauvais, by Antoine le Pautre, and the Hôtel Lambert de Thorigny, by Louis-le-Vau. In the former the extreme irregularities of the site are so artistically dealt with as to yield a fully equipped and conveniently arranged house grouped round a court, forming a complete geometrical figure, while all irregularity is absolutely dissimulated. The great Château of Vaux-le-Victoire was built about 1656-60 for Nicholas Fouquet, the Minister of Finance, by Le Vau. This house is particularly interesting in that its buildings, with their decoration by Le Brun and the first artists of that day, and its splendid lay out by André le Nôtre, have been preserved almost intact, and sympathetically restored. Le Vau gained sureness of handling as he advanced in life, and his Collège Mazarin is perhaps the first French public building to give definite expression to the Grand Manner.

After sketching the evolution in decoration which had taken place in the middle of the seventeenth century, Mr. Ward devoted the second half of his lecture to the development of the Louvre and the Tuileries. The Louvre as it stood at the commencement of the sixteenth century was a mediæval castle founded in 1204, and built round a nearly square court. It occupied the south-western angle of the present court, where its outline is marked in the pavement. Rebuilding was begun in 1546 under Pierre Lescot, and was

continued during three hundred years. In 1564 Catherine de Medici commenced the erection not far off of the Tuileries, according to a scheme prepared by Philibert de l'Orme; but the uncompleted work was abandoned in 1572. Le Vau was at work both on the Louvre and on the Tuileries a hundred years later. With the seventeenth century the history of the palaces stops abruptly for nearly one hundred years. Under Napoleon the Tuileries once more became a palace. The two buildings had a chequered career until May 1871, when they were set on fire; the Louvre did not suffer much, but the Tuileries were gutted. Later the ruins were cleared away and the pavilions restored.

CHEVALIER DE MARTINO.

Six dozen oil and water-colour sketches (mostly in petto) from the brush of the lamented Chevalier Eduardo de Martino, Marine Painter-in-Ordinary to his Majesty the King, appeal to the suffrages of the art-loving public from the walls of the Fine Art Society in New Bond Street. And to such as were privileged to have their art education fostered and sheltered under the ægis of the Chevalier there will be a special chord of appeal. These chords do not always return the desired sounds of harmony, for tastes vary with the times, ideas alter with kaleidoscopic uncertainty and irrevocability, and pupils become teachers and art critics. Not that the art critic in *présenti* (the conjunction of ideas suggested by this Latin phrase is scarcely pleasant) was ever pupil of the lamented Chevalier, but *simila similibus respondent*. With such brief introduction, a few paragraphs may be devoted to the exhibition of this artist's works, mostly seascapes.

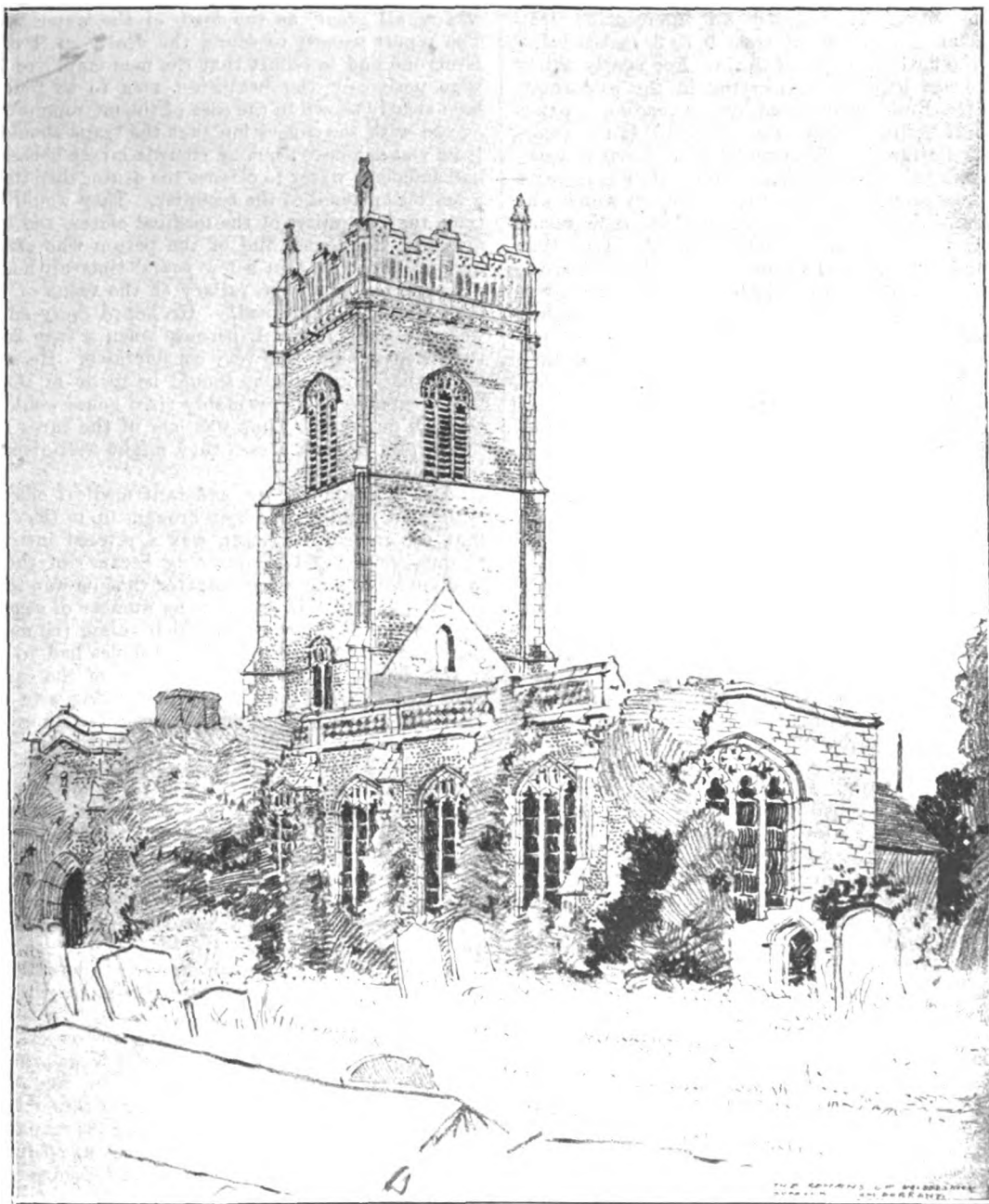
Slight as some of them prove to be, and perhaps too slight to merit a place on the walls, when the portfolio would be a more fitting receptacle, yet the general effect, in traversing the gallery, is one that does credit to the artist. Such works, for example, as "The Royal Yacht Squadron at Cowes," "Herding Cattle—Buenos Ayres," and "Barge on the Thames" are trifling water-colour sketches, and "A Fishing Boat" is a trifle in oils, but all the same it is most attractive, with the moon appearing from behind the bulwark of a heavy bank of clouds and spreading its silvery sheen over the bosom of the deep.

What is the keynote of the Chevalier's work? In three words—a bright palette. Not the post-impressionists' brightness, *bien entendu*, for our artist and their artists (!) are poles asunder. Apropos des poles, we are shown half a dozen sketches of the South Polar regions, No. 16 almost suggesting the child's idea of the existence of a veritable pole at 0°; it is, however, a highly effective sketch, with the blueish-grey bergs standing out against the wintry sky. No. 22 is also good, though not as attractive as the former; the penguins give an appearance of gross exaggeration in size. No. 68 is decidedly clever, and herein are no precipitous bergs, but a mere abstract effect of frost and isolation.

"Rio de Janeiro" (No. 1) has all the Martino brightness, but is somewhat hard in outline, though we have nothing but praise for the figures depicted. "H.M.S. Victory" (No. 4) is delightful, showing the famous boat under bellied sails standing solitary on the deep blue waters. The artist was so much a master in modelling and painting ships; observe "H.M.S. Victory and H.M.S. Euryalus," "The Garibaldi Sailing Ship," and "The Coast of Spain," the latter with its warship in the offing, the pretty colouring in general and the realistic rose-tinted bank of clouds. "The S.S. Asturias" is noticeable, showing the waters coloured in heavy ultramarine towards the horizon and prettily tinged in green in the foreground (if that term may be employed).

M. de Martino is also represented by some post-"Trafalgar" sketches: "The Santissima Trinidad" (No. 17), provides us with a fine stormy effect at the period of sunset; the same subject, treated in No. 19, is less attractive. "The Bucentaure" is one of the best on show; it may well be termed a Tartarean poem (for, though conscious of having used this term before now, yet it must be remembered that the art critic's vocabulary is not as varied as the artist's palette); the burning ship with the lurid mountain of flames, reflecting and casting an unholy glow upon water and leviathans respectively, must be seen in order to be appreciated.

"In Canada" is a particularly bright morceau with the Martino touch strongly in evidence; contrast it with "Breaking Waves," an excellent sketch, but not in the



WALBERSWICK CHURCH, SUFFOLK.—From a sketch submitted for the Pugin Studentship, 1912, by Mr. A. M. DURRANT.

characteristic bright key, being painted in neutrals and appropriately showing a sullen effect over sky and water. "Crossing the Line" is a poem in regard to colour, though somewhat harsh in technique. "On the Thames" is Martino à la bonne heure, charming in its homeliness and with human interest in the young couple on the moored boat. "In the Atlantic" is another most attractive piece, with its pleasant colouring of the water and the effective trail of grey smoke left by one of the outgoing steamers. Attention must be drawn to No. 38, "Scotland—Day and Night Effect"; here is to be seen the Chevalier's happy treatment of lunar poetry, previously noted, and this, too, applies to "Cowes" (No. 45), "A Dreadnought," and others. "Holland" (No. 49) is a wonderful study in clouds. We must also notice "The Landing Stage, Liverpool," for its crisp treatment in neutral notes, and "Capri" for its brightness and vigour. To others we would like to refer, but space fails, and we must be satisfied to recommend art-lovers to visit the galleries for a personal inspection.

THE schemes of the Manchester Education Committee for this year include the erection of new schools at Heald Place, Rusholme; Old Hall Drive, Gorton; Crowcroft Park, Longsight; and at Sandy Lane, Chorlton-cum-Hardy.

THE Bucks Archaeological Society have passed a resolution protesting against the further removal of the iron railings in the Sion College cloisters, and asking the Earl of Rosebery, the President, to use his influence and good offices towards this end.

THE ROYAL SANITARY INSTITUTE.

A MEETING of the above Society was held at 90 Buckingham Palace Road, S.W., on November 12. Sir Maurice Fitzmaurice, C.M.G., M.Inst.C.E., took the chair. A discussion was commenced on "The Report of the Departmental Committee on Intercepting Traps and House Drains."

Sir Maurice Fitzmaurice said they would all regret to hear of the death of Dr. Darra Mair, the Chairman of the Departmental Committee, whose report they had met to discuss that night.

A vote of condolence was then passed.

The discussion was opened by Mr. H. Percy Boulnois, M.Inst.C.E. (Chairman of the Council of the Royal Sanitary Institute). In our issue of last week, on page 301, we gave a report of his paper.

Mr. R. Read, A.M.Inst.C.E., Gloucester, said he was sorry Mr. Boulnois had not been entirely convinced by the report of the Departmental Committee. The intercepting trap was patented in 1872 as a result of a panic, and became incorporated into the model by-laws of the Local Government Board in 1877. The trap was thereupon taken for granted by all concerned. But defects soon began to show themselves. Between 1879 and 1882 he was himself making experiments on sewer ventilation, and he came to the conclusion that the trap was a useless and dangerous obstruction, as it paralysed the action of the drain, and rendered it filthy throughout. It was wrong in principle, and thirty-five years' tinkering had failed to remedy it. If a sanitary or building inspector in testing a drain discovered one pipe had a back-

fall of half an inch he would rightly have it relaid. But the same inspector cheerfully inserted an intercepting trap which created an obstruction of from 6 to 8 inches below the invert of the flattest length of drain. For nearly thirty years his voice had been like one crying in the wilderness, until in 1906 Dr. Butler had joined him in reading a paper before the Royal Sanitary Institute, entitled "Is the Intercepting Trap a Failure?" Then in 1908 the Local Government Board arranged this Committee, which after four years of thorough investigation had produced a report which was a condemnation of the trap on every count of the indictment. True, they gave it the benefit of the doubt on the claim that it cut off the sewer air from the house drain. The advocates of the trap were very hard pressed for arguments, and they fell back on rats. But a rat could dive through an intercepting trap very easily; but he defied any rat to get through a gulley trap with a grid on weighing 3lb. The primary object of all drains and sewers was quick delivery of the sewage to the outfall before decomposition. A trap retained its contents for at least eight or nine hours every night, and for a shorter time during the day. The flow through a sewer, however, was continuous, owing to the numerous drains flowing into it. The sewer was what the drains made it. The removal of the trap rendered both drains and sewers cleaner, and, therefore, there must be less risk, and not more. This was proved by the experiments described in the report. The Departmental Committee had expressed a pious opinion about sewer ventilation. There were only two forces which needed to be considered with regard to it—namely, the wind and the gravitation of the sewage down the sewer. The flow of air down a sewer was continuous, and in the same direction as the flow of the sewage. He hoped the Local Government Board would have the courage to act on their own report and withdraw the by-laws, and that inspectors would act with the same zeal in removing as they had shown in inserting the trap. If that were done they would soon get real cleanliness instead of a sham.

Dr. Philip Boobyer, medical officer of health, Nottingham, remarked that he unhesitatingly accepted the scientific results and conclusions of the Departmental Committee. With some of the facts they had already been acquainted. He only demurred to a general application of the results arrived at by the Committee to cases essentially different from those which furnished them. The behaviour of sewers in different localities was as diverse as their method of construction, their situation, and their contents. Sewers of low and high gradient did not require the same treatment. There was one argument which ought to be demurred to. They did know definitely that there was no cause or relation between sewer air and diphtheria. In the report the inference appeared to be in the contrary direction. He believed that many of the experiments had been made with badly constructed apparatus, and probably in too large drains. He was in favour generally of retaining the intercepting trap, which, when acting efficiently, prevented the access of undiluted sewer air to the atmosphere in or around a dwelling. It was impossible to convince the public that a bad smell was not necessarily associated with a corresponding injury to health. He had known several instances in which an intolerable nuisance had been occasioned through the ventilation of a public sewer by means of a high tubular ventilator carried up the outer wall of a house, the sewer air being directed by air currents and eddies into the interior of adjacent houses by the windows and chimneys. In his opinion, the number of traps which became choked was exceedingly small. Of course, radical alterations had taken place in the views held by experts as to what should be the best form of the Bucknall trap, and it had been very considerably modified during the past twenty or thirty years. If an occasional breakdown was to be considered sufficient ground for condemning the apparatus, then many things must go by the board, including the water-closet.

Mr. T. de Courcy Meade, M.Inst.C.E., Manchester, said that in 1909 he had supplied the Committee with information which showed that in Manchester there were 23,248 intercepting traps in use. The ascertained average number of stoppages per annum was 150, or 0.6. This showed pretty conclusively that traps of proper construction in conjunction with properly laid drains did not give much trouble in Manchester, at any rate. Since they had been introduced the Corporation had employed a very large staff of inspectors, and the greater part of the redrainage work had been carried out by the contractors to the Corporation. These facts, no doubt, accounted for the small amount of trouble they had received from the intercepting trap.

Mr. F. Sumner, M.Inst.C.E., City of London, stated that personally he was strongly against intercepting traps where

the distance from the trap to the lavatory accommodation was at all great, as the force of the water was then lost. The report seemed to sound the death knell of such traps. Everyone had to admit that the men employed in the sewers were positively the healthiest men to be found—that had been clearly shown in the case of the metropolis. He entirely agreed with the suggestion that the traps should be removed from small houses; but as regards larger houses, where they had sufficient water to cleanse the drain, then its removal was a matter optional to the occupier. They would have to overcome the prejudices of the medical officer, the architect who designed the house, and of the person who used it; but he had no doubt that in a few years' time all houses would be disconnected when the fallacy of the value of the trap had been properly explained. He hoped every engineer would welcome their removal, because when a trap became choked the inconvenience was very considerable. He strongly advocated that house drains should be made of iron; the additional expense in a reasonably sized house would not be more than 20 per cent. That was one of the cures for the whole thing, and in such a case they might well dispense with the intercepting trap.

Dr. William Butler, assistant medical officer of health, Willesden, said he had been brought up in the orthodox faith that the intercepting trap was a revered institution not to be questioned, and it was only because of the facts borne in upon him as an administrator that he was forced to question the dogma. It was not the number of complaints as to the choking of interceptors which raised the matter, but the fact that if for any purpose manholes had to be examined it was found in a large proportion of the cases that they were choked, and the cap of the raking arm was missing. That was a very serious matter when there were about 30,000 interceptors in the district. And Willesden compared extremely well with the other localities examined by the Departmental Committee. People very often did not know when their drains were choked. The Committee recommended that in future, whether they had interceptors or not, drains should be made in such a manner that there should be an early indication of any choking. The abolition of the intercepting trap was the only effective way of safeguard against sewer air. The trap necessitated a fresh-air inlet, and this usually was placed in close proximity to the house. People would have a 5-inch opening immediately below the sill of a window communicating directly with the drain; and no one thought anything about it. In 10 per cent. of the cases the drain was ventilating the sewer. If they did away with the interceptor the corollary was that the drains should be made gas-tight and air-tight, and that could be done undoubtedly by having an iron drain. It might well be made a condition of the abolition of the trap that the drain should be iron, and that it should be cut off from the manhole, so that the moment there was a blockage it would show at once at the nearest gulley.

Dr. Louis C. Parkes, medical officer of health, Chelsea, asked how much of the stoppages of the intercepting trap were solely due to the faulty laying of the drain, and not to the trap itself. Colonel Horrocks, whose experiments at Gibraltar threw so much light on the question, considered that where there was no intercepting trap, or where the raking arm was open, drain air would readily pass into the sewer and out again through adjacent house drains. The suggested abolition of fresh-air inlets where intercepting traps were used would, he thought, be a great mistake. Although they might possibly in certain cases be a source of some danger, yet as a rule they provided the fresh air to keep the drains sweet. He certainly did not think the intercepting trap was a thing to be given up lightly. The pioneers of hygienic science were responsible for it. He did not care what the bacteriologist or the physiologist said; medical experience showed that where sewer or drain air got into a house there was a liability of actual sickness among the inhabitants.

Mr. E. Van Putten, M.Inst.C.E., Lewisham, declared himself in favour of the report. Sewer air had been found to be of a better condition than drain air, and when that was once acknowledged no argument was left for the use of the interceptor. His chief reason for wishing to abolish the interceptor was in order to have better ventilation for the sewers, and if they got ventilation for the sewers through the house drains, which, after all, were the chief offenders in causing smells in the sewers, he did not see why they should not have it.

Mr. A. J. Dickinson, Redditch, said he was entirely in favour of the report. The chief question was its effect on their future policy with regard to interceptors. His own Council had issued the following circular to architects and

builders: "In view of the report of the Departmental Committee of the Local Government Board, the Council feel that they cannot enforce their by-laws requiring interceptor traps and fresh-air inlets to be provided on the drains of new buildings. In future, plans will be approved if they show all drain openings to be properly trapped, and if a 4-inch vent shaft be provided at the highest point of the drains." The wisest course would be to block up the air inlets that caused a nuisance and remove the interceptors when they became choked.

Mr. G. B. Hartree, Alton, said he had come as a champion of the intercepting trap, and, so far, had heard nothing to make him change his views.

The discussion was resumed on Tuesday last, the 19th inst.

Mr. H. C. H. Shenton said it appeared to him that the report was based on evidence overwhelmingly proving that the intercepting trap was open to objection. Therefore, it was waste of time to discuss the merits or demerits of the trap. The subject for discussion ought rather to be how they were going to apply the report. The intercepting trap was declared to be unnecessary so long as the fittings are properly trapped, in which case there would be very little risk of drain or sewer air getting into a house. It should be noted that everything was trapped twice except the water-closet, which had only one trap. He suggested that if the interceptor was taken away the w.c. ought to have more than one trap.

Mr. C. H. Cooper, M.Inst.C.E., Wimbledon, thought the crux of the whole question was "sewer air." The arguments in the report were based on the investigations of bacteriologists. Bacteriology, whether they relied on it or not, was very much governed by chemistry—which science they had had much longer than bacteriology. The great fault of the report was that it made light of the dangers of sewer air. To found an argument solely on chemistry and bacteriology seemed to him to be dangerous and wrong. They all knew of actual instances where serious evil effects had been suffered from sewer air. The intercepting trap must, of course, be attended to, otherwise a nuisance would be created.

Mr. Johnson, Wimbledon, opposed the idea that sewers should be ventilated through the soil pipes. The owner of a private property had, he said, the means of ascertaining whether or not his own drains are perfect, and he can remedy the defect if they are not. But he has no means of finding out about the sewers. Everyone knew that there were sewers—and sewers. The report declared the fresh-air inlet to be a nuisance; if that was so, the nuisance lay in the intercepting trap on account of such reasons as bad design or bad construction. His own experience was that quite as many stoppages occurred in the back manhole, where there was no intercepting trap, as in the front manhole, where there was one. In his own district there were no traps in connection with the service water drains, and it was only about those that they received any complaints. He was quite satisfied in his own mind that sewer air has a very harmful effect. They might not agree with the report, but he did agree with the idea that local authorities should be allowed to use their own discretion in administering their drainage by-laws, which at present were sometimes a very great hardship.

Mr. J. Jennings spoke on the necessity for disconnecting the sanitary fittings from the house drains. The authorities agreed that the danger lurked in the smaller private drains rather than in the sewers. Yet little or no attention has been given to the disconnection of the soil pipes from the house drains. The water closet was not disconnected at all. It behoved sanitary engineers to fortify all houses against drain air.

Mr. E. Willis thought that Willesden had done a great service in being instrumental in bringing together so much useful evidence on the subject. Surely it was impossible for them to collect better evidence than a Departmental Committee, with its unlimited means and other advantages, had obtained. Again, were they going to ignore that evidence? Personally, he had concluded that something was wrong with the intercepting trap prior to the publication of the report. He had examined a number of the traps with excreta under ordinary conditions, and found that many of them were choked with paper and rags. Only in one or two instances was the blocking-up due to the stoppers falling into the trap itself. But in every case that he tested with a pail of water he found that the excreta and paper were entirely removed. Anything less than a three-gallon flush only occasionally did this. Consequently, he came to the conclusion that there was room for improvement in the methods of flushing. They must disabuse their minds of the

idea that an intercepting trap was a proof against rats, for that was not so. He believed that in a large number of cases the intercepting trap would be done away with in consequence of the report. The maximum weight of opinion was in favour of their removal. But when the traps were done away with they must provide a double trap for every water closet. This is only given in the case of the valve and the syphonic closets. If they did this they would be tending to lessen to a minimum the chance of rats having access. The witnesses who appeared before the Departmental Committee were not men who had axes to grind, and their status in the profession was sufficient to show that they would give impartial evidence. The bacteriological evidence proved that splashing was the primary cause of the discharge of offensive gases in both drains and sewers. He totally disagreed with the suggestion that because a sewer was apparently odourless and inoffensive it was therefore incapable of producing any ill-effects on those who breathed the air. A recent examination by an assistant and himself of a length of sewer which was apparently odourless and yet which nearly overcame them both was proof to the contrary.

Mr. Scott argued that if there was no danger in the air which escaped from sewers there could be no objection to getting rid of intercepting traps. The latter might undoubtedly become out of order after being installed. It was generally recognised that the ventilation of sewers was still an unsolved problem. It seemed to him, however, to be a very dangerous proceeding to make a great and revolutionary sanitary alteration upon evidence which might be upset before many years had passed. It was quite possible that the Royal Sanitary Institute might, after having committed itself for many years to this system, decide to drop the advocacy of the trap in consequence of the report. Later on some terrible creature may be discovered in the drains, and householders will be ordered to replace all the interceptors until scientists had discovered a disinfectant capable of killing the animal.

Dr. Porter said he began by being orthodox, but before the appointment of the Committee he began to have doubts about the intercepting trap. Nothing had yet been said in the discussion which shook his opinion that the trap was no protection. If it was going to stop anything at all it would be to stop the contents of the drains to which it was attached.

Mr. A. A. G. Malet said that two of the members of the Departmental Committee (on which he had served) were brought up in the orthodox faith as to the efficiency of intercepting traps. Their report had not been written in order to bolster up or pull down the reputation of the trap, and the members had had no intention of showing any preference. His own belief was that sewer air was less dangerous than drain air, though by that he did not mean that either of them was necessarily unobjectionable. That makes the necessity of an intercepting trap other than a vital one. If there were extraordinary circumstances the trap might certainly be necessary. One of the great dangers in the absence of a trap was in the possibility of the ventilator pipe becoming blocked. No one wanted either drain air or sewer air in a house. In the report the Committee paid particular attention to the question of smells, and they recommended iron pipes. Evidence showed that in Germany there was only one town which required intercepting traps, and there it proved such a nuisance that the authorities had to take them out.

Mr. A. J. Martin remarked that he had taken the precaution of making sure of his premises before attending that meeting, and he found that the dictionary said a trap was a snare. He himself was afraid that most traps had in them elements which rendered them a delusion and a snare. Dr. Butler had argued that a trap was an excellent thing. But it seemed to him (the speaker) that a trap was very much in the nature of a charm as recommended for wear against evil—though it was too big to wear round one's neck. In his opinion a trap would serve an equally useful purpose if used to grow geraniums in. They laid their drains ever so carefully, and then put in a contrivance which holds back the solid matter and brings about stagnation of the sewage. The advocates of the trap were reduced to awful straits—a weaker argument than the talk about rats it would be difficult to find. There was no doubt whatever that the objections to the trap were really tangible ones, whereas the advantages of it were problematical. A very heavy blow had been struck at the idea that a trap was necessary in all cases. But they must bear in mind that sanitary engineers would stultify themselves if they compelled people now to root out what they have been compelling people to put in. Householders should be given an option in the matter. Too far-reaching conclusions ought not to be built up from the

report. He did not think it safe to rely altogether upon the investigation; they ought also to have an investigation of results. It might be well for the Council of the Royal Sanitary Institute to combine with the Council of the Institute of Sanitary Engineers, and address circulars to the various authorities throughout the country and ascertain their opinion on the subject. Then the results could be summarised by someone highly competent, and brought before the proper people.

Mr. Cottram thought that the time would come when they would be able to do away with the intercepting trap. But as in several of the provincial towns there were old sewers they were bound to cut the people off from the air emanating from them. When they so improved the sewers that they were no longer elongated cesspools then they would find the public willing to do without intercepting traps. He abominated the fresh-air inlet, and he considered that there was no need to carry fresh air into the drains; and he was doubtful whether it was necessary to pump air into the sewers. In the present state of public opinion, however, he thought that no one would be justified in ordering the abolition of the trap. But they might be given permissive power to sanction its abolition in the case of new systems of sewerage.

Mr. Thomas Gorniot considered that the finest result of the investigation was the recommendation it carried with it for the employment of iron pipes.

Mr. H. Percy Boulnois, M.Inst.C.E., in concluding the discussion which had been opened by his summary of the report, remarked that he did not think they were any nearer a conclusion than they were when they started that discussion. What they wished to discuss was what precautions they would have to take if the intercepting trap was to go—and he believed that it would have to go. First of all, their sewers would have to be reconstructed properly. Then all the drains must be connected at a proper level to avoid splashing, and they must be exceedingly carefully laid. The water closet would have to be double sealed. Iron pipes would come into almost general use, and in that improvement he believed thoroughly, as they gave greater general security. He hoped there would be an improved flush, because half the present evils—and what probably caused the Departmental Committee to be appointed—were due to the insufficiency of the two-gallon flush. Its introduction by the water companies was poor economy, for people had to use a two-gallon flush two or three times, whereas a four-gallon flush did its work at once. It was to be regretted that more sanitary inspectors had not been examined by the Committee. They would have to accept the fact that the trap, though not condemned, was proved to cause trouble. Therefore it must be permissive for the officers of the various authorities to take each place on its merits, and act accordingly in the matter of its abolition or continuance. He had been brought up in the belief that the intercepting trap was a safeguard against a common enemy, the public sewer. He still had an idea lurking in his mind that sewer air was bad.

RIVERSIDE STUDIES BY H. S. TEED.

AN Art critic is not necessarily one who cannot practise the art criticised. This is not meant to be funny, merely leading to the statement that the present office-holder has at various times practised the noble profession of Apelles, having had the advantage of being trained on sound principles. This being so, there is justification in offering a suggestion that Mr. Teed would have been well advised to treat his subject in water-colours instead of in oils. For there is a domesticity about the Thames, even in its grey moods, that seems to ask for the more tender treatment of the lighter medium. However, what is presented to the gaze must be accepted as an accomplished fact, and judged from the standpoint of the heavier medium.

Mr. Teed is most to be commended in his studies after nightfall. "Queenhithe at Night" and "Evening, from Battle Bridge Stairs," toned in blues and greys respectively, are worthy of inspection; there is more "subject" in the latter, thus rendering it the more effective. "Cannon Street Station: A Summer Night," though not equal to these in merit, is still very pleasant, and is worked in more cheerful tones of blue than "Queenhithe." Another study, somewhat similar in effect to the last-named, is "Near Southwark Bridge at Nightfall"; whilst "Summer Evening Below Tower Bridge" is bright and is well touched-in, but what is the meaning of the curious brown patch in the sky? is it perhaps a masthead flag detached from its mast? The dark hull in the foreground of the picture forms a telling contrast

to the lightness and brightness elsewhere. "St. Paul's" would be better had the paint been laid on less grossly, for thereby the "breadth" is destroyed (until the eyes are half-closed) and the detail-modelling is shattered; still, the work is well-modelled en masse, and is very forceful. "The Foundry Dock" is a fine, broad study of an interior, the light and shade are well managed, and there are atmosphere and clean colour, qualities in general absent from this collection.

In "Showery Day" is presented a distinctly clever picture in greys, with the sky and water well put in. "Early Morning Below the Bridges" forms a satisfactory sketch; chiaroscuro is here in evidence, and the "distance" effect is very successful. Certain other exhibits are passable, such as "High Tide off the Tower," "Just Before Dawn," &c., but the latter seems scarcely worth painting. "Summer Morning from Hungerford Bridge" will not do at all; the colour is coarsely splashed on, and even from extreme diagonal survey the coarseness is apparent. "A Spring Morning from the Southwark Side" is anæmic, and some other works are also distinctly poor; nor, indeed, is the whole effect of the Exhibition, despite individual good works, other than poor and unsatisfactory.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Architects' and Surveyors' Approved Society.

SIR,—It is doubtful if architects and surveyors or those employed by them have fully realised the effect of the Insurance Act, or the way in which it will in the future affect them. When the benefits payable under the Act come into force and those employed fall sick, and find (as is bound to happen in many cases) that their employers decline to pay the usual salary, the trouble will begin.

The principal reason for the formation of the "Architects' and Surveyors' Approved Society" is to keep in the profession the funds supplied by architects and surveyors, and those employed by them, instead of allowing them to be distributed amongst the miscellaneous membership of the ordinary Approved Society. That it was wanted is proved by the daily growing membership. But in addition we believe that many members of both professions have long felt that they would like to see some form of provident or benevolent fund available for those clerks and assistants who may, through no fault of their own, fall on evil days, but the difficulties of starting such a scheme and administering it fairly have hitherto stood in the way of its foundation. Now, however, that new conditions have arisen, the Insurance Act has made the necessity of some such scheme greater than ever for the reason above mentioned, and the same Act has created the necessary machinery for administering and organising such a fund by means of the honorary members of the Society, who subscribe 10s. 6d. per annum.

The Architects' and Surveyors' Approved Society have now under consideration various suggestions and proposals for administering the annual sum which is provided by the subscriptions of honorary members, and it is hoped that the professions will widely support this fund. It is proposed to work in harmony with the existing Architects' and Surveyors' Benevolent Societies, which all exist for the Principal rather than the Assistant.

All communications, subscriptions, or suggestions will be welcomed, and should be sent to the Secretary at 18 Tufton Street, Westminster, who will submit them to the sub-committee now dealing with the subject.

No active steps will be taken in the actual administration of this fund until definite proposals have been submitted to the Councils of the Royal Institute of British Architects, the Surveyors' Institution, the Architectural Association, the Society of Architects, and the Quantity Surveyors' Association, who are represented by their Presidents and Secretaries. —Yours faithfully,

GEORGE CORDEROY,
A. GODDARD,
IAN MACALISTER,
H. D. SEARLES-WOOD,
C. MACARTHUR BUTLER,
MAURICE E. WEBB
(Members of Sub-Committee).

The Architect.

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FORTHCOMING EVENTS.

Friday, November 29.

Edinburgh Architectural Association: Associates' Annual Smoking Concert, at 8 P.M.

Institution of Municipal Engineers: Meeting at Gloucester, at 3 P.M.

Saturday, November 30.

Institution of Municipal Engineers: Meeting at Exeter at 3 P.M.

ARTS AND CRAFTS.

THE tenth exhibition of the Arts and Crafts Exhibition Society does not seem to have benefited by its change from the New Gallery to the new Grosvenor Gallery.

The lessened amount of space at its disposal seems to have affected not only the quantity but also the quality of the work exhibited, or perhaps it is that the Arts and Crafts movement has done its work and raised the level of artistic craftsmanship to a point beyond which it is unable to go.

As we walk through the Grosvenor Gallery we are impressed with the feeling that we have seen it all before, that there is nothing fresh, but simply replicas of ideas that have become the trade mark of the Arts and Crafts Exhibition Society.

We are inclined to doubt whether, in regard to many branches of craft, the work now on show is as good in design as that which we have seen on former occasions; from these, however, we must except metal work and jewellery. There are in various rooms several glass cases containing metal work, in silver principally, which, both in design and execution, is admirable, whilst the jewellery is wholly delightful. Sumptuous book-making is also a craft which provides admirable specimens of excellent and artistic workmanship, both in bookbinding, in printing, and in manuscript decoration and illumination.

Woodwork is generally good and up to the usual standard of the Arts and Crafts Exhibition Society, although there are some few works to which we are inclined to take exception. The place of honour in the long gallery is, for example, occupied by a large fireplace for a new room at Dunsany Castle, Ireland, designed by George Jack, executed by McLaughlin and Harvey, assisted by Henry Elliot (foreman), the carving by J. Milligan and George Jack. We understand that this work is unfinished as regards the oak overmantel, and that some of the panels are to be carved and coloured. At present the oak is very new and its tone clashes with that of the very beautiful green and blue-grey Irish marble of the mantelpiece. The design of this marble work is not quite admirable as it adopts the falsity of a keystone in the lintel, and on the keystone is a silly little corbel which has no other function than to break the horizontal lines of the design, and that unhappily.

In the oak overmantel there is a jumble of lines and panels which suggests a laboured effort at originality rather than the wise restraint which is generally pre-

valent in woodwork in this Society's exhibitions. The carving is very elaborate, but there is a lack of harmony in the feeling of the various portions, and the whole work suffers from a lack of restraint.

Another fireplace, in the small gallery, is designed by H. Longden, executed by the Carron Company, assisted by F. Rhodes, J. Dalton, and J. Howershand, and is also not a very satisfactory production. The mantel is of black marble veined with white, the overmantel in wood painted white, the contrast being a good deal too startling for our liking. Here also the marble lintel has a sham keystone, and the best part of the whole composition is the grate in bright steel moulded and chased, but even this is disfigured by meaningless lines of mouldings which have no particular reference either to construction or composition, but are no more than an attempt at applied ornament, and even that not a particularly pleasing attempt.

Mr. Ambrose Heal is represented by several admirable pieces of furniture, in which he has made good use of the capabilities of black-bean wood in a book and print case and a china cabinet with inlaid lines in box and ebony and little pieces of mother o' pearl. A dining table in chestnut, a sideboard in walnut, and a dresser in chestnut, are all sensible pieces simply designed, not even excepting the circular fronted drawer in the last-mentioned article. A writing bureau with bookshelves in walnut is also simple and good.

Sir Robert Lorimer is also an extensive contributor of a number of pretty things in wood, leather, and metal, which include several groups of pendant angels for new choir stalls at Dunblane Cathedral executed by Louis Deuchars and carved by W. and A. Clow. These angels, but for their wings, are of very mundane disposition and busily engaged in making love.

A painted and gilded cabinet by Jessie Bayes and a praying desk by the same lady are examples of misdirected endeavour which could scarcely find a place in any building of the present day. Inelegant architectural forms and a dazzling expanse of gilding ruin all opportunity of enjoyment of some of the painstaking decoration which has been lavished on these unfortunate articles. The crafts would certainly be better without the assistance of such art as this.

A carved reading desk in walnut for Highbury Hill High School, designed by John D. Batten and executed by Norah Bennett, is clever in its simplicity of construction with piquancy of form.

There are many admirable examples of carved work

Monday, December 2.

Royal Institute of British Architects: Business Meeting at 8 P.M.
Royal Academy: Course of Six Lectures on "Chemistry" opens at 4 P.M., by Dr. A. P. Laurie, D.Sc.
Architectural Association: Athletic Club Dance at the Wharfedale Rooms (Hotel Great Central), at 9 P.M.
Society of Engineers: Paper entitled "The Deflections of Reinforced Concrete Beams," by Mr. Percy J. Waldram, F.S.I., M.C.I., at 7.30 P.M.

Tuesday, December 3.

Illuminating Engineering Society: Paper entitled "Modern Methods of Indirect Lighting," by Mr. F. W. Willcox and Mr. H. C. Wheat, at 8 P.M.

Wednesday, December 4.

Royal Archaeological Institute: Paper entitled "The Corbridge Excavations, 1912," by Mr. R. H. Forster, LL.B., F.S.A., at 4.30 P.M.

Edinburgh Architectural Association: Paper entitled "Robert Adam, Artist and Architect," by Mr. Percy H. Fitzgerald, M.A., F.S.A., at 8 P.M.

Northern Architectural Association: Students' Meeting at 7.30 P.M.

Nottingham Architectural Association: Exhibition and Criticisms of Designs for "An Oriel Bay," by Mr. H. Gill, M.S.A., at 8 P.M.

Guild of Architects' Assistants: Paper entitled "My Experiences of the Formation of an Approved Society," by Mr. W. H. Baker, at 7.30 P.M.

as, for example, the "Edge of the Forest" by A. Muriel Møller, a long carved panel in walnut in low relief that is, however, rather spoilt by an over affectation of conventionalism in the trees which bear flowers bigger than the deers' heads; it is also rather a mistake in composition in so small a work to have two hinds of identical pose. A carved hawk and a carved owl, both in wood, by M. Grace Mead, are clever, and next to them another carved owl by O. Waldmann, as a newel post for staircase, which, with a smooth surface as its use demands, has a wonderful amount of expression.

A very fine piece of modelling is a little work in silver by A. Bertram Pegram of "The Babe, the Son of Mary."

The stained-glass designs are not altogether admirable, although there are some very good pieces. Three cartoons by C. W. Whall and M. Hutchinson for the figures of St. Columba, St. Margaret, and St. Athanasius are excellent pieces, and the florid treatment of the quasi-architectural accessories, although open to objection from one point of view, nevertheless expresses its purely decorative function.

Karl Parsons in a coloured design of part of east window in St. Mary's Church, Norwood Green, has a very tame and easy-going St. Michael shown in a drawing in which both the saint and the dragon appear quite at their ease and void of all suggestion of conflict.

The same artist's "Fortitudo" and "Spes" in his design for part of window in All Saints' Church, Eastchurch, Sheppey, are more suitable to the narrow lights of the window for which they are designed. Mr. Parsons, however, seems to be fond of red spots of blood.

There are not many illustrations of actual architectural work in the Exhibition. Mr. C. R. Ashbee has apparently two studies of a design for the London Fraternity House, Shrewsbury Court, Chelsea, one shown in an isometric drawing which seems to attempt art by a crude combination of battlements and crowssteps with peculiar and incorrect Renaissance detail, whilst the other design, shown in washed-out water colour, is at least a reasonable treatment on "new art" lines.

Mr. A. S. Dixon illustrates by drawings and photographs his executed Church of St. Basil, Birmingham, a Romanesque brick building with a mosaic, designed and executed by F. Hamilton Jackson. Mr. Arthur J. Penty exhibits by photographs a picturesque and simply treated house, "Noonfield," Haslemere, which derives much of its charm from a sloping site. Mr. A. H. Powell shows photographs of a simple stone building at Brandsley, and Mr. Curtis Green a small Church of the Good Shepherd, Frensham, which is a simple brick barn artistically treated. Mr. Ernest Gimson shows his design for the new capital of Australia, which does not appear to us to possess any particular merit.

NOTES ON BOOKS.

"Concrete Costs. Tables and Recommendations for estimating the Time and Cost of Labor Operations in Concrete Construction and for introducing Economical Methods of Management." By Frederick W. Taylor, M.E., Sc.D., and Sanford E. Thompson, S.B., Member American Society of Civil Engineers, Consulting Engineer, Authors of "A Treatise on Concrete, Plain and Reinforced." (New York: John Wiley & Sons. London: Chapman & Hall, Ltd.)

The scientific analysis of costs in all branches of manufacture is a development of industry which is carried on in America to an extent never dreamed of by some of our old-fashioned rule-of-thumb contractors and their estimating clerks. Indeed it is scarcely going too far to say that no bill of quantities priced in this country will give for every item a profit on the actual cost of the work, much less a uniform rate of profit throughout. The general principle which seems to be adopted in the pricing of building work in this country is that "what you lose on the swings you gain on the roundabouts," and

if the job on the whole comes within a reasonable margin of the anticipated profit, the contractor is satisfied.

We doubt whether the volume before us represents anything but a fair approximation to an average when we find that the amount of time taken to do a certain piece of work by hand labour is estimated to the decimal of a minute. The amount of work done by hand in a given time varies even on similar operations with the character and ability of the workman, the weather and other conditions and the efficiency of the supervision of foreman or ganger, and it is only by taking observations of a large number of similar operations that any reliable average can be arrived at as to the length of time that a particular piece of work will take. We have an example of this in the book before us where observations were made on the work done by mixing gangs preparing concrete. One gang mixed and laid 50½ cubic yards per day of ten hours, whilst another operated 68 cubic yards in the same time.

In so far as the information given in the book is made up from averages of many jobs, it affords useful guidance for a contractor, but it must be remembered that the instances and examples are taken from American production, where, as we know, men are paid at higher rates of wages but do considerably more work than they do in this country. There can be no question that scientific investigation of the cost of work by careful detailed analyses of various operations tends to a better arrangement and management of those employed, and their more economical production.

"The Law and Practice of Rating both within and without the Metropolis." Third Edition. By Walter C. Ryde, of the Inner Temple, K.C. (London: Butterworth & Co. and Shaw & Sons.)

This book has always been considered as one of the leading authorities on the law and practice of rating and is modelled on plans which make it complete and well arranged. The new edition appears to be as well up-to-date as the others have been. The whole of the book has been thoroughly revised, and all new cases have been incorporated. The preface to the new edition is interesting reading, and the author's suggestions are well worthy of careful consideration should our legislators ever find time to codify the law relating to rating.

The question as to the rating of railways, docks, gas, water, and tramway companies are matters very often of a complicated nature, and whether Quarter Sessions should still deal with them is a matter which requires consideration, but in this text book, for the present, they certainly have a valuable guide and collection of authorities.

The whole question of rating and assessment is so technical and involved that it is seldom that these matters are dealt with without going to a specialist on the subject; even a specialist requires a good book of guidance and reference; in Ryde's book on rating they will find what they require.

"Problems in Engineering with Solutions." First Series, 1909-10. Edited by Sydney G. Turner, A.M.Inst. C.E. (London: St. Bride's Press, Ltd.)

This little book is a reprint of questions and answers from the assistants' and students' section of the "Surveyor and Municipal and County Engineer." It must not be assumed as the title would suggest that this publication is merely a compilation of mathematical computations, for it is really something more. The book contains only 186 pages, and yet in it are found matters relating to mechanics and hydrostatics, strength and elasticity of materials, theory of structures, surveying and levelling, water supply and hydraulics, sewerage and sewage disposal, roadmaking and tramways, building construction and materials, and in a final chapter many miscellaneous matters from practical mathematics to the design of abattoirs and the testing of the illuminating power of gas.

The book should prove useful to young men preparing themselves for the career of a municipal or county engineer. They will find many useful examples worked out in detail of the kind they are likely to meet with in their everyday occupation, as well as much other information of a practical kind.

The mathematical knowledge required is of a simpler order, for in the solution of only a very small number of the problems given is a knowledge of the calculations required.

The book is full of suggestions to the engineering student, and the editor is to be congratulated on the manner in which he has performed his task. If a fault is to be found, it is in the fact that no index has been provided to the book. The explanations are generally full, clear and suggestive; and it is perhaps only in the treatment of the problem on the theory of structures

THE MONASTIC MANOR OF COBHAM.*

By MR. THOMAS G. LARKING.

ALTHOUGH during the progress of building operations on the Glebe Estate at Cobham evidences of the Celtic and Roman occupation were revealed by Mr. Frederick Higgs, it is not until the reign of Wulfhere, King of the Mercians, that Cobham seems to take its place in history. The Venerable Bede speaks of the holy life of Earconwald, and of his building two famous monasteries: one for himself at Ceortesei (Chertsey) and the other for his sister Ethelberga at Bercingham (Barking); and Chertsey had the distinction of being the first monastery erected in Surrey. A charter printed by Kemble, which he considered earlier than the year 675, is a grant of lands for the augmentation of Chertsey Abbey by Frithwald; and it is signed by himself, Earconwald, and King Wulfhere. The lands were the personal property of the under-king, and the thorp or village by Chertsey, with its five dwellings, was the only place identi-



THE OLD CHURCH HOUSE, COBHAM.

involving the calculations relating to a roof truss that a fuller explanation is necessary than that given.

In the first alternative method of solving this problem, at page 42, the student is instructed to use Rankine's "Method of Sections," but no reference is given to any text book in which an explanation of this method will be found. This method will not be known to all students, and in consequence they may find it difficult to follow the calculations given on the page mentioned.

No doubt the editor will put these small matters right when the second edition goes to press.

SIR ARTHUR BLOMFIELD & SONS, architects, have prepared plans for a church building to be erected on the north-western side of Park Walk, Chelsea, S.W.

MESSRS. JOHN BELCHER, R.A., & J. J. JOASS have prepared plans for additions and alterations to Messrs. Whiteley's premises in Queen's Road, Bayswater, W.

fied; the rest of the lands, over which two hundred people were scattered, had not yet acquired distinctive names. The Chartulary of the Abbey gives the date of its foundation as 666, and the lands bestowed by Earl Frithwald, sub-regulus of Surrey, included the present Cobham. Earconwald remained Abbot of Chertsey until 675, when Theodore, Archbishop of Canterbury, consecrated him Bishop of the East Saxons, with his seat in London. He died in 693, was buried in St. Paul's Cathedral, and was duly canonised, as were Ethelberga and Theodore.

The grant of Cobham with other manors to the Abbey was confirmed by Offa, King of the Mercians, in 787, when Ceolnod was Abbot; by Ethelwulf in 827, apparently during the lifetime of his father, King Egbert; and about 890 by Alfred the Great, during the abbacy of Beocca. Edgar the Peaceful in 964 not only confirmed the grants to Abbot Ordbright, but re-established the Abbey, which had been burned by the Danes; and the possessions were further

* Read at a meeting of the Upper Norwood Athenæum.

increased by Edward the Confessor in 1062, when Siward, who became Bishop of Rochester, was Abbot. And so through the ages Cobham remained the property of the Abbots of Chertsey, and William the Norman, when Odo was Abbot, seemingly made no effort to dispossess them, for in the Domesday record, as translated by Mr. E. H. Malden, M.A., we read: "The Land of the Church of Chertsey. In Amelebridge Hundred. The Abbey itself holds Covenham. In the time of King Edward it was assessed for 30 hides; now for 12½ hides. The land is for 10 ploughs. In demesne there is 1 plough; and (there are) 29 villeins, and 6 cottars with 9 ploughs. There are three mills worth 13 shillings and 4 pence; and 1 acre of meadow. Wood worth 40 hogs. In the time of King Edward it was worth 20 pounds; now 14 pounds. William de Wateville holds 2 hides of the Abbey itself." These two hides are believed to be represented by a farm called Norwood, formerly Northwood.

Like most place-names, the orthography of Cobham has undergone various modifications. From Covenham it was changed in the thirteenth century to Coveham; in a "Fine" the 5th of Edward IV., it appears as Coham; in a Post Mortem Inquisition it is Cobeham; in the Inventory of Edward VI., Cowham; and a seventeenth-century shopkeeper named Thomas King marked his "halfpenny" token Cobum. Probably etymologists have struggled and juggled with the word, seemingly without tracing its derivation, but, as we see in early Saxon days it was unnamed and probably uninhabited, it is evident that from the monks it received its first name; and as Covent Garden, vulgo Coven' Garden, is a corruption of the Convent Garden of St. Peter's, Westminster, may we not read in the name that Covenham was originally the ham or farm of the Convent of Christ and St. Peter at Chertsey?

The Domesday Book makes no mention of a church at Cobham, but it is quite probable that a Saxon timber structure stood there, for the Normans do not speak of any churches at Guildford, though it is known they existed at the time. The first recorded rector was Michael, in 1224, under the abbacy of Alan; and the church is mentioned in the taxation of Pope Nicholas IV. in 1291, when Bartholomew de Winton was Abbot. It is dedicated in honour of St. Andrew, and the earlier parts are the tower and south doorway, which Mr. Philip Johnston assigns to about the year 1150. The north chapel he dates from 1200 to 1220, and the windows inserted there to about 1330. In 1853, 1866, 1872, 1886, and again in 1902 restorations took place, and some of the walls were rebuilt, but the old roofs of the nave and north chapel, dating from the latter part of the fourteenth century, have, fortunately, been preserved. The Norman tower shows much of the original work within; in the upper storey on each of the four faces there are two round-headed lights divided by a round shaft with scalloped cap, and enclosed by a round-headed arch. The entrance to the tower on the east side is by a plain round arch on square jambs with scalloped caps. The south doorway has zigzag moulding, showing signs of recutting. On the south side of the north chapel there is a thirteenth-century triangular piscina with two drains. Two of the brasses are of considerable interest. The oldest is a small rectangular incised one representing the Adoration of the Shepherds. It shows a shed, with an erect figure of St. Joseph—disproportionately large—and the Virgin lying on the ground, with the Holy Child in a crib by her side. The heads of an ox and ass peer over their stalls, and two shepherds and a sheep-lad stand in adoration. The date is about 1500. The other brass is a palimpsest now revolving on pivots. The obverse shows a priest in full Eucharistic vestments bearing the chalice and Host. This brass Dr. F. R. Fairbank, F.S.A., assigns to about the year 1510. The reverse represents a man in armour, and no doubt is the one mentioned by Manning and Bray as being in the old church chest, which still remains. An inscription was with it commencing, "Of your charite pray for the Soules of James Sutton, sometyme bayle of this Lorde-shyppe and Mawde hys wyf." This Sutton died in July 1530. Of modern monuments the basrelief of "The Pilgrim at Rest," by Richard Westmacott, junr., is probably the most interesting. It is a memorial to W. H. Cooper of Pain's Hill. There are six bells, the earliest dating from 1687, and the imperfect registers commence in 1562. The present vicar is the Rev. Canon William Leighton Grane, M.A.

Mr. J. W. Flower, F.G.S., traces the name of the Mole in Amelebridge, as the Hundred was termed, and evidently a wooden bridge crossed the river in Saxon times; but at Cobham there were only fords, the one on the road to East Horsley, and the other on the Portsmouth Road.

By the marriage of William the Conqueror with Matilda

of Flanders, the blood of Alfred the Great was conveyed to the future Kings of England, and by the first marriage of Henry I. a more direct descent was established. The ill-fated Edmund Ironsides had a son, Edward the Outlaw, and his daughter Margaret became the wife of Malcolm III. of Scotland. Their daughter Matilda, also known as Maud, Mahalde, and "Good Queen Molde," was the first wife of Henry I., and when the river Mole was swollen one of her maids of honour was drowned in attempting to cross the ford. For the repose of her soul the Queen had a wooden bridge constructed, and the Abbot of Chertsey, probably Hugh, and the Lord of the Manor of Walton-on-Thames agreed to keep it in repair. But the bridge was only available at flood-times; at others it was barred. Maud is chiefly remembered as having founded the Priory of the Holy Trinity within Aldgate in 1107, and the Leper Hospital of St. Giles-in-the-Fields in 1108; and Henry I. is stated to have granted various rights to the Abbot, probably William, including free warren. Later a wooden bridge was constructed at the other ford, and for centuries they remained. About 1760 the East Horsley Road bridge was replaced by a brick one, at Downside, and by statute of George III. a stone bridge was built at Pain's Hill on the Portsmouth Road, the foundation having been laid on July 15, 1782; and here it may be mentioned that after the battle of Worcester Elizabeth Wyndham assisted Charles II. to escape, and in recognition of her services he granted a fishery at Cobham Bridge to her husband, Thomas Wyndham.

Edward I. in 1285 confirmed to Abbot Bartholomew his hunting rights at Cobham, and leave to enclose a park, so at that time the manse or grange would probably be erected.



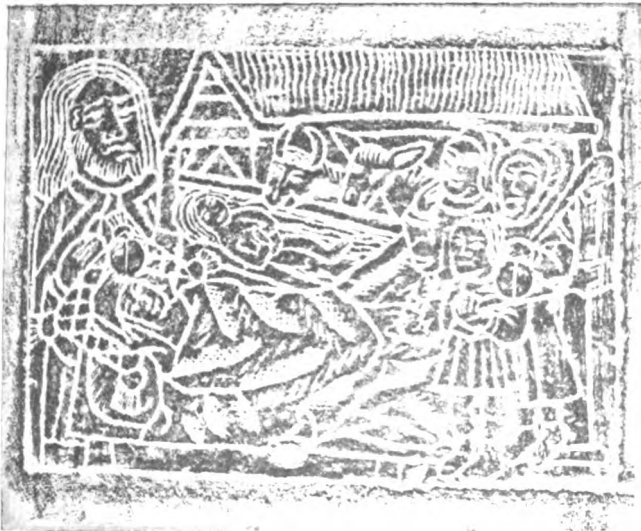
COBHAM CHURCH, SURREY.

In the reign of Henry VI. in 1432 Abbot John de Hermondesworth is believed to have built the Church Style House, probably as a resting-place for pilgrims, and as a home for the officiating priest, and in 1635 it was restored. These dates were found carved on a bracket when, about ten years ago, Mr. Leonard Martin, F.R.I.B.A., again restored the building. From the last Abbot, John Corderioy, it passed to the Crown, and subsequently the freehold was bought by Roger Bellowe, whose will is dated April 29, 1614. John Aubrey, writing in 1718, quotes from the table of benefactors fixed in the church: "Mr. Roger Bellow gave 20s. yearly for ever out of the rent of Church Stile House to be distributed in Bread to the Poor on Good Friday." Virtually he bequeathed the freehold to the churchwardens of St. James, Clerkenwell, conditionally that they paid twenty shillings yearly to the churchwardens of Cobham, and the residue of the rent was to be spent "none otherwise than in bread" for the poor of Clerkenwell. Later the house became a Home of Rest for ladies of slender means, and then for women of all classes. More recently it passed into the possession of Mr. John Joseph Brown, who still resides there. A half-timbered building with picturesque gables, Ye Old Church Style House is one of the charms of Cobham, and in some of the rooms the old oak panelling remains.

Abbot John Corderioy in April 1534 granted a forty years' lease of the manor to Richard Sutton, but Henry VIII., who was ever attracted to fresh hunting-grounds, induced Corderioy to part with it, and not unwisely he did so in exchange for £5,000; and so in 1537 the manor of Cobham became Crown property, and Henry was there for the sport of the chase on several occasions. On Henry's death in 1547 the manor passed to Edward VI.

The Norman Survey mentions three mills as belonging to the Abbey of Chertsey. At present there are two, and probably they occupy the old sites. The one as we approach Church Cobham, where the Mole, or Emlyn stream, broadens out, is particularly picturesque, and we may regard it as the one that on April 10, 1552, Edward VI. granted to Sir Anthony Brown, Knight, on condition that he kept the "cogges, ronges, and bayes" in repair.

On the death of Edward in July 1553 the manor became the property of Queen Mary, and in the same year she granted it to George Bygley and his wife Elizabeth. In 1564 their daughter and heiress, Dorothy, becoming the wife



COBHAM CHURCH.—BRASS, "THE ADORATION OF THE SHEPHERDS," circ. 1500.

of Robert Gavell, conveyed the manor to him, and in August 1572 he obtained a grant of arms. He died in 1595, and their son Francis succeeded to the property. His son Francis became the next lord of the manor, and, dying in 1633, was succeeded by his son Vincent, and on Vincent's death it passed to his son Robert Gavell, who in 1708, with the sanction of his son Robert, sold the manor to the Viscountess Lanesborough.

This sale is somewhat interesting, for, though the manor was virtually parted with, the manor house was retained as the personal property of the Gavells, and it became known as Cobham Court.

From the Gavells Cobham Court descended to the Woods of Littleton, in Middlesex, and when Manning wrote in 1804 Thomas Wood was the owner. In Brayley's time (1846) it was the property of Colonel Wood, M.P. for Brecknockshire, and was tenanted by Thomas Baker. A few years later it was sold, and became the seat of Mr. Philip Warren; later it was purchased by Mr. Bennett, and is now occupied by Mr. C. J. Agar.

Cobham Court, though partly rebuilt, still contains portions of the old manor house, and of considerable interest is the Priest's Hole or hiding-place. By Mrs. Bennett some particulars have been kindly given. Although the front of the Court has been rebuilt, the back part is of fifteenth-century work. The Priest's Hole, discovered about seven years ago, is in the chimney of the servants' hall behind the kitchen. It is a chamber about 5 feet square, and clearly indicates that the Gavells followed the faith of their fathers. The upper portion of the chimneypiece in the hall originally belonged to the White Lion Hotel, but was purchased and re-erected by Mr. Bennett. It is elaborate Jacobean work. The cellar is interesting, and from it a blocked-up passage formerly led to the Mole.

The oldest part of the present Cobham clusters by the parish church, and is known as Church Cobham; with the coming of the coaches on their way to Portsmouth and elsewhere, hostels and houses sprang up along the main road, and so Street Cobham was formed. And in later days the old tilting ground was encroached upon, and the district of Cobham Tilt came into being.

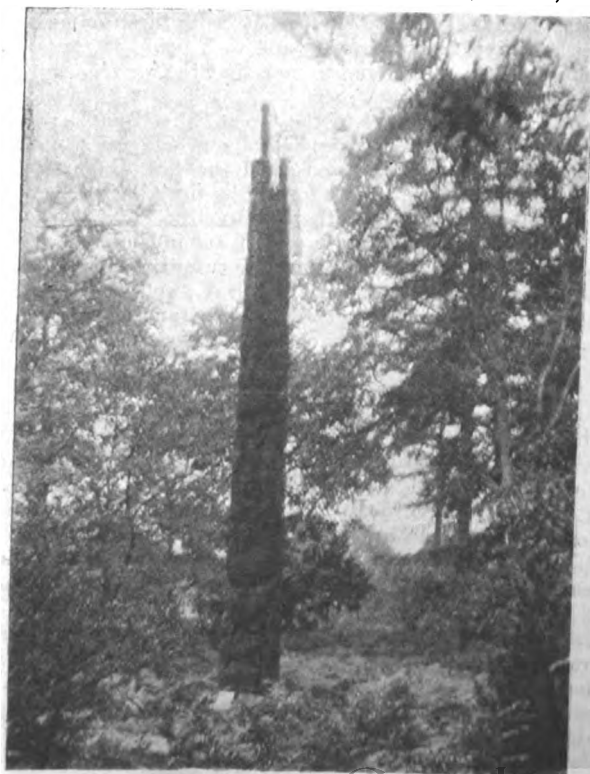
The White Lion Hotel, a relic of the old coaching days, is the most interesting inn remaining in Cobham. In the public bar, the wide chimney corner, with its seats and niches for the mugs, remains. In the smoking-room the fireplace is partly backed by Tudor bricks in herring-bone work, and in other parts of the house there are ornamental stone fireplaces. A paragraph in *The People* of October 3, 1897,

stated that recently when the wall paper was stripped off some old oak panelling had been revealed. This panelling is now seen in the oak-room; part of it is early Elizabethan, the rest is mitred. On two or three of them coats of arms are emblazoned. The passage, too, is panelled, and is surmounted by ornamental Jacobean moulding, and here the date 1649 is marked, and the same date appears on the back wall of the house. But this may only be the date when possibly a timber front gave place to the present red bricks. By John Taylor the names of several old inns have been handed down to us. He was born in 1580, and became a Thames waterman. During his leisure moments he wrote crude verses, and so he is still remembered as the Water Poet. He saw the sedan chair give place to the private carriage, and witnessed the advent of the hackney coaches. Carriages in the London streets he described as "hell carts," considering that the life of every foot passenger was in danger. Could he re-visit the glimpses of the moon, what would he say of taxi-cabs and motors? He travelled about a little, probably making most of his journeys by water, taking notes of what he saw, and in 1636 he published a book relating to them. The names of the chief inns he also recorded, and at Cobham he mentioned "The Lion" and "The George." So seemingly the White Lion is older than the recorded date. The George was quite recently taken down, and has not been rebuilt.

The word "totem" was first printed in 1791, when J. Long issued his "Voyages and Travels of an Indian Interpreter." Many of us first heard of totems through reading "The Song of Hiawatha," by Henry Wadsworth Longfellow; and from Section 14, headed "Picture Writing," we get a fair idea of what totems were. Through the advance of the pale-faces, many Indians had perished, and no sign marked their graves. Hiawatha induced his followers to remedy this, and with his pigments he taught them how to paint:

And he said: "Behold, your grave-posts
Have no mark, no sign, nor symbol.
Go and paint them all with figures;
Each one with its household symbol,
With its own ancestral totem;
So that those who follow after
May distinguish them and know them."
And they painted on the grave-posts
Of the graves yet unforgotten
Each his own ancestral totem,
Each the symbol of his household;
Figures of the Bear and Reindeer,
Of the Turtle, Crane, and Beaver.

By this we see that the totem was a primitive form of heraldry, the tribal or family crest. Henry Rowe Schoolcraft, LL.D., in his important work on the Indian tribes of America, reproduced in colours several of the totems, among them a merman, a kingfisher, tortoise, catfish, eagle,



TOTEM POLE AT COBHAM.

reindeer, wolf, deer, and bear. Later it seems that the painted posts gave place to carved ones, as being more durable, and, from being merely grave-posts, totem poles were erected in front of the chiefs' wigwams. One of these Mr. Bertram H. Buxton obtained from the Haida Indian village of Masset, Queen Charlotte Islands, British Columbia. He brought it to England in 1882, and erected it in his grounds, known as Fox Warren, Cobham; and that it is the most important pole of the kind in Europe is fairly certain. The embedded portion of the pole having decayed, it was re-erected on the estate of Mr. George Barnes, Foxholm, and it now stands on a concrete base, and is held by an iron framing. It is 41 feet high, is virtually black, and Mr. Higgs identifies the wood as pine, and seemingly it is the *Pinus Lambertiana*. It may be described as a pedigree pole, for besides showing the bear totem, several quaint human figures are carved above and below it. The oldest totems known are the turtle, the bear, and the wolf. Among additional totems mentioned by Andrew Lang are an eel, pigeon, hawk, cockatoo, dog, wombat, frog, owl, emu, kangaroo and turkey. Mr. Otis Tufton Mason, M.A., gives illustrations of totem posts in Queen Charlotte Islands. One is somewhat similar to Mr. Buxton's, and another is surmounted by the full figure of a bear. Two other pictures of poles in the same island are given, but these, instead of being of wood, are of black slate, and the totems represent the eagle and raven. Harmsworth illustrates three poles on an Indian grave at Klinkwan, but what the totems represent it would be difficult to determine. In a descriptive paper on Mr. Buxton's pole, written by Professor Edward B. Tylor, D.C.L., F.R.S., in 1898, he says: At the summit of the pole three figures are seated, whose rank is shown by their wearing chiefs' hats. And he cites a legend in relation to the deluge connected with a tall hat. Other legends are given by Mr. J. Deans in "Tales from the Totems of Hidery," published in 1899. The figures, however, we may accept as chiefs; the highest one as the first who was known as the Bear, and his supporters as his immediate successors. The next group is described as the Bear with the cub between his paws, and eating a frog. Lower down is Hoorst the Bear and Joivats the hunter; and the story is given that once when the Bear returned home he found his wife confused, and he charged her with unfaithfulness. This she stoutly denied, but when she went to fetch wood and water the Bear tied a magic thread to her, and, following it, he found her with the hunter, whom he at once slew, as shown in the carving. Towards the base of the pole are two figures, and below them is seen the Wolf.

Several writers have argued that the Indians worshipped their totems, and believed themselves to be descended from animals and birds; and Grant Allen, B.A., contends that the early Anglo-Saxons had a similar belief. But in neither case is there any real evidence to support such a theory. From their personal and physical characteristics, strength, endurance, keen sight, fleetness of foot, wisdom, and other traits, Indians and Saxons alike won their names, and they honoured their ancestors and took pride in their pedigrees; and it is interesting to note that Herbert Spencer held this view.

The Indians believed in the Great Spirit, and as Gitche Manito, Wazheaud, Moneda, or Maho peneta, he was always their creator; and all Saxons held the Scandinavian faith that their first parents were formed by the All Father Wodin from the sacred ash tree, the Yggdrasill.

Besides the authorities quoted, I am indebted to writings by James Thorne, F.S.A., M. S. Cornford, Henry J. Sides, C. A. Vellacot, A. Ridley Bax, F.S.A., and George Catlin; and for considerable aid given me in arranging this meeting I acknowledge the kindness of Mr. Frederick Higgs, and for literary assistance I thank my friend Mr. W. F. Harradence.

FRENCH RENAISSANCE ARCHITECTURE.—VII.

In his seventh lecture of the course now being delivered at University College, Gower Street, W.C., Mr. W. H. Ward, M.A., A.R.I.B.A., dealt particularly with "The Culmination of the Grand Manner—Style of Louis XIV."

The previous lecture had shown how, during the middle years of the seventeenth century, the rather coarse elements of the architecture of Louis XIII. were refined away, how classical influences and at the same time the ideas of grandeur and pomp grew. The architectural expression which these ideas found in the culminating period of Louis XIV.'s reign was called by Mr. Ward the Barocco-Palladian compromise. The declamatory spirit of Italian Barocco, though closely akin to the French ideas of the time, had, on the one

hand, to be toned down. The rationalistic or utilitarian theory of design formed another element in the Grand Manner as evolved in France. The architecture of Louis XIV. thus arose out of a compromise between the conflicting schools, some examples of it inclining more to one extreme, some to the other, others, again, clinging to the rationalistic method, but none escaping altogether the influence of the compromise.

The growth of the Grand Manner and its expression in the terms of the Barocco and Palladian compromise was illustrated by Mr. Ward in the successive alterations to the great Royal Palace in Paris which grew out of the combination of the Louvre and the Tuileries, particularly in the history of the completion of the Louvre Court, whose eastern side was still unbuilt. What was to be expressed was the palace of a monarch who said, "L'Etat c'est moi." Bernini's scheme was a fitting emblem of absolute monarchy at its culmination. But it was too revolutionary. Perrault came on the scene, and exactly hit off the requirements of the situation. His admirable Louvre Colonnade has been much criticised. It certainly ignores minor truths of structure and utility in order adequately to express the culture and the aspirations of the time. The Barocco element in Perrault's Louvre on the eastern and river fronts is to be found, if at all, chiefly in the grandiose spirit of the conception. In all else—in proportion and detail and ornament—Perrault shows himself of the pure Palladian school. The effects of his design were far reaching. His use of the lower storey as a stylobate for an order embracing the two upper storeys became the stereotyped treatment for almost all palatial and monumental architecture in France for a century or more.

A much more decided leaning to the emphatic Barocco manner is exhibited in many of the important works of the Grand Reigne. In one group the Barocco element is formed in combination rather with the rationalistic than the Palladian tendency; examples are the Porte St. Martin in Paris, and the Porte du Peyron at Montpellier.

If the thing be regarded as a whole Versailles, the favourite residence of Louis XIV., may be accepted, according to Mr. Ward, as the most complete artistic expression of the Grand Reigne. This includes its decoration, furniture, and works of art, its gardens and its dependencies. Mr. Ward then traced the history of the building from the reign of Louis XIII., when it was a little brick château, till 1789, when it ceased to be a Royal residence. The work of enlargement was commenced under Le Vau. Between his death in 1670 and a revival of building operations in 1678 the great decorative works of Le Brun and his army of craftsmen were mainly carried through. In the artist's declining years the chief influence was wielded by Jules Mansart, a great nephew of François Mansart. Le Brun is justly credited with a large share in the formation of the style Louis XIV. His work is characterised by all the heroic scale, the massiveness and clear ordinance, and all the richness of form and colour of the style evolved by Vouet, Le Pautre, Marot, and others under Mazarin.

The last years of Louis XIV.'s reign, said Mr. Ward, in conclusion, were years of comparative failure. As regards architecture, though there was no actual decline, there were symptoms of change. A decrease in the unity of aim became manifest, particularly as the influence of Le Brun diminished, and after his death in 1690. After him, while the Grand Manner in, at any rate, monumental architecture suffered no eclipse, and while it retained to a great extent its Palladian purity and even increased in severity, the type of ornament which accompanied it, and the type of internal decoration which it housed, abandoned more and more the solemnity and pomp which had characterised them in the great days of Louis XIV., and assumed a gayer, lighter, more capricious tone. Though the taste of the designers still continued to invest the union of architecture and decoration with the appearance of harmony and congruity, which is often very charming and effective, it is nevertheless evident from the study of the first half of the eighteenth century that they were essentially diverse in their aims, pulling in opposite directions and not permanently reconcilable.

ILLUSTRATIONS.

BANK OF ADELAIDE, LONDON, E.C.

This building has been erected upon the site of the old premises occupied by the Bank of Adelaide since 1895.

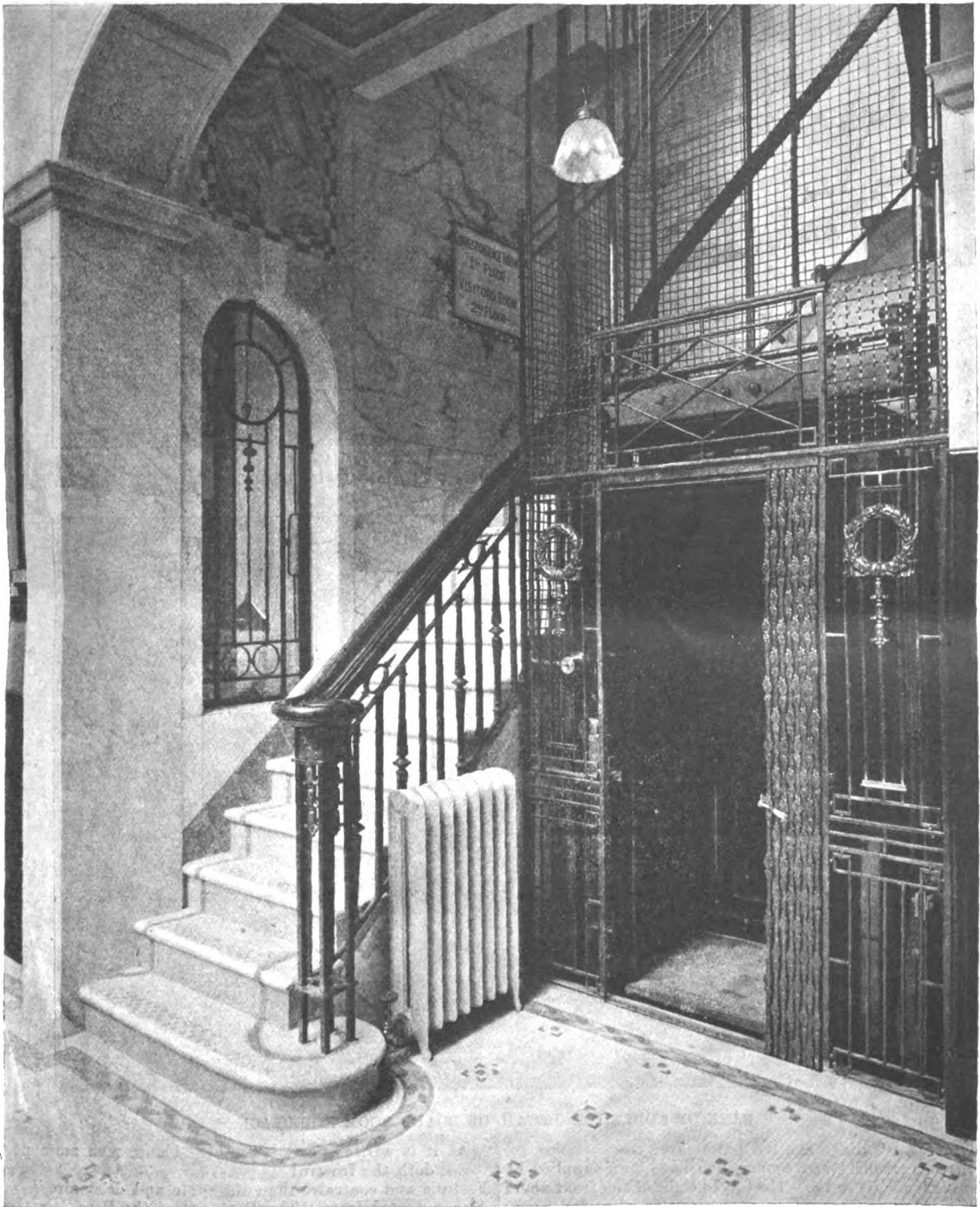
The new premises comprise four floors, the fourth being occupied by the resident housekeeper.

The third floor consists of one large room about 45 feet by 28 feet, to be used for storage, stationery, &c.

The second floor consists of two large front and back rooms, used respectively as a visitors' and a reserve room.

The first floor is occupied by the correspondence staff and Board room. The correspondence room, about 45 feet long by 28 feet wide, is well lighted from both ends. The necessary wall finishings cannot be completed at present, owing to the new brickwork being insufficiently dry. The Board

department at rear, seems to afford a satisfactory solution to this most important problem. The central position of the staircase, fitted with full automatic push button safety lift constructed by Messrs. Smith, Major & Stevens, Ltd., and lighting area in the centre of the building afford excellent light and ventilation throughout. The walls of the banking hall have been lined with second statuary marble by the Art Pavements and Decorations, Ltd. The fittings throughout the banking hall are in Honduras mahogany.



BANK OF ADELAIDE.—LIFT ENCLOSURE AND STAIRCASE.

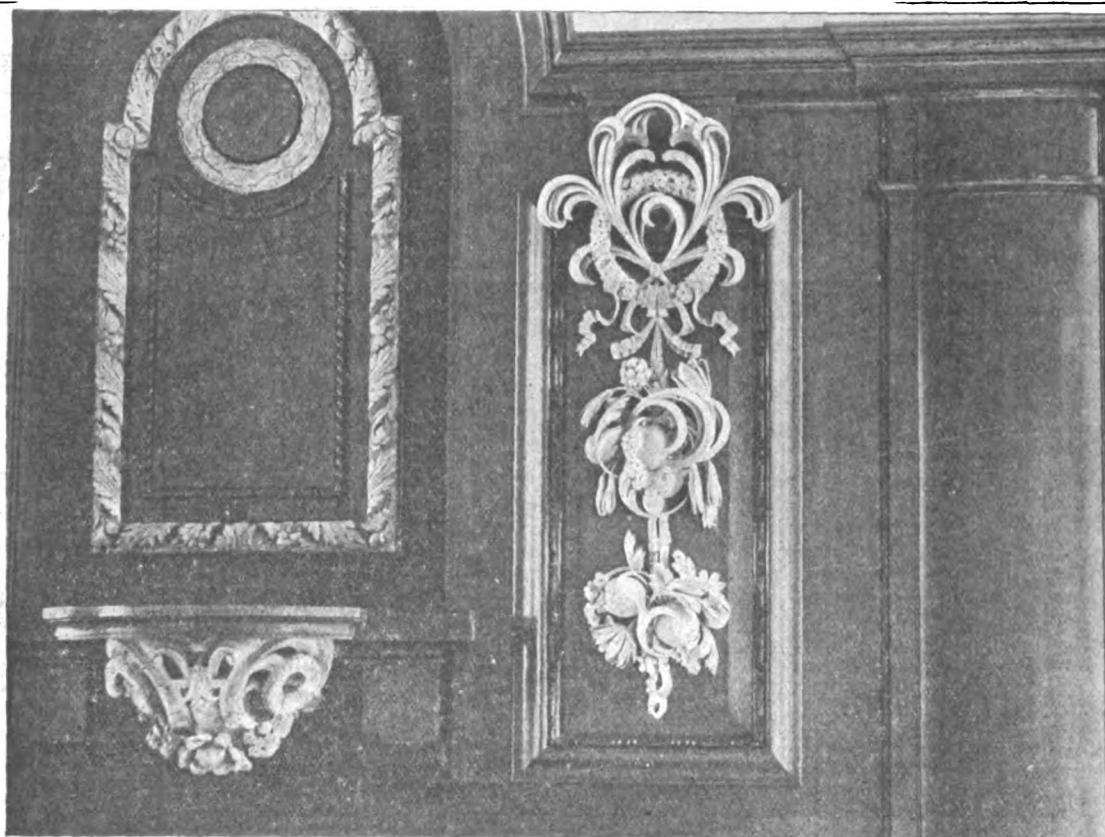
room, measuring 30 feet by 24 feet, is well-proportioned, and various Australian produce and flowers, &c., the ram's horns having been worked into design for corbel under the clock shelf. This oak work and the carving by Mr. Rogers has been executed at Messrs. Trollope's Grosvenor Road Works.

The ground floor, which is used for general banking purposes, extends for a depth of about 90 feet back from the pavement, and was somewhat difficult to arrange, owing to the narrowness of the site. However, the plan adopted of placing the cash desks and bill department upon either side of a central passageway, with manager's room and securities

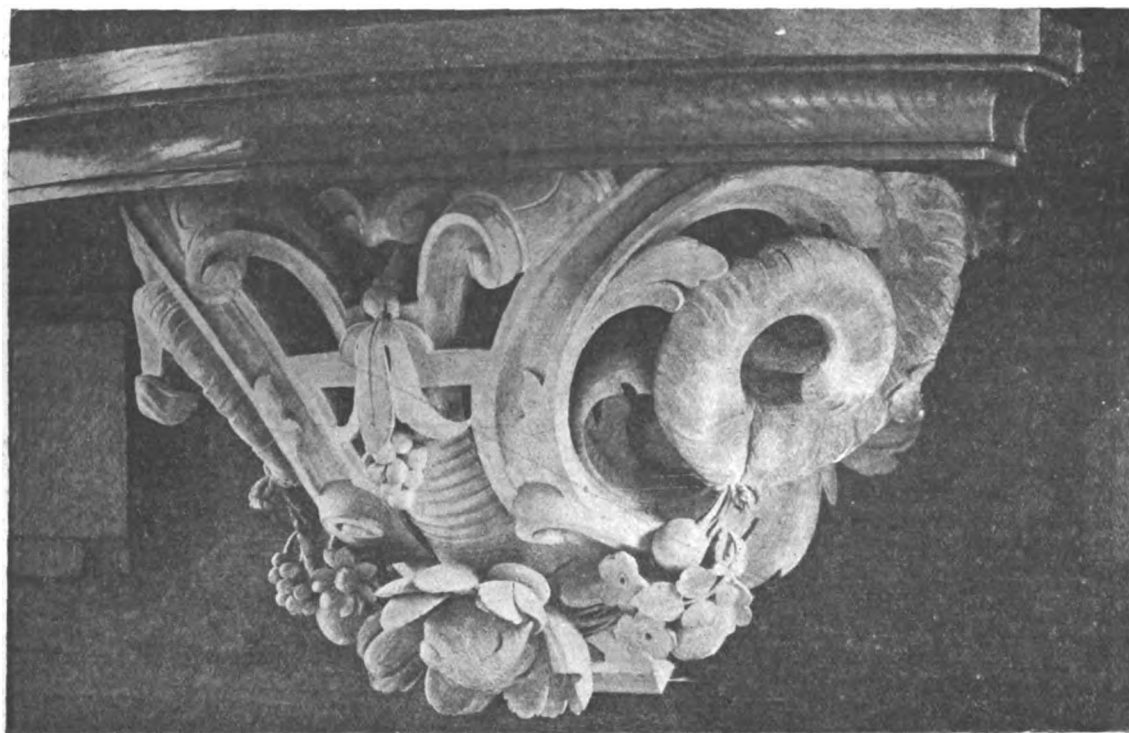
The basement is used entirely for strong rooms, safes, &c., and staff lavatories, with the exception of storage reserve. The strong room, treasury and safe construction has been carried out by Messrs. Hobbs, Hart & Co. and Messrs. Chubb.

The building is warmed throughout from heating apparatus in the basement, together with hot water supplies to all lavatory basins. The work has been carried out by Messrs. George Wright & Co., Ltd.

The front has been built in Portland stone facings, while the rams' heads in frieze over the ground floor are intended



BANK OF ADELAIDE.—DETAIL OF BOARD ROOM FIREPLACE.



BANK OF ADELAIDE.—DETAIL OF BOARD ROOM FIREPLACE.

to typify Australia. The red letters over the entrance are in vitreous enamel upon copper, and have been supplied by Messrs. Yennadis & Co. The total height of the front above the pavement is 63 feet 6 inches, exclusive of roof.

The building is of fire-resisting construction throughout, all steelwork (which has been supplied by Messrs. Rutt & Co., of Basinghall Street, E.C.) being cased in concrete, and the floors and roofs constructed of steel and concrete.

The building has been carried out from the designs and under the superintendence of Mr. Lionel U. Grace, A.R.I.B.A.

PANEL IN OAK FOR A DOOR.

THIS panel, 3 feet 4½ inches by 2 feet 2 inches, was carved by Mr. Mark Rogers, R.B.S., for a billiard-room. The inscription around reads:—

"As it is written, and is sooth and unto men more profit doth the froward Fortune and contraire than the swote and debonaire," and is quoted from "The Romaunt of the Rose," by Jean de Meun, translated by Chaucer.

TERRA-COTTA PANELS IN WALNUT FRAMING.

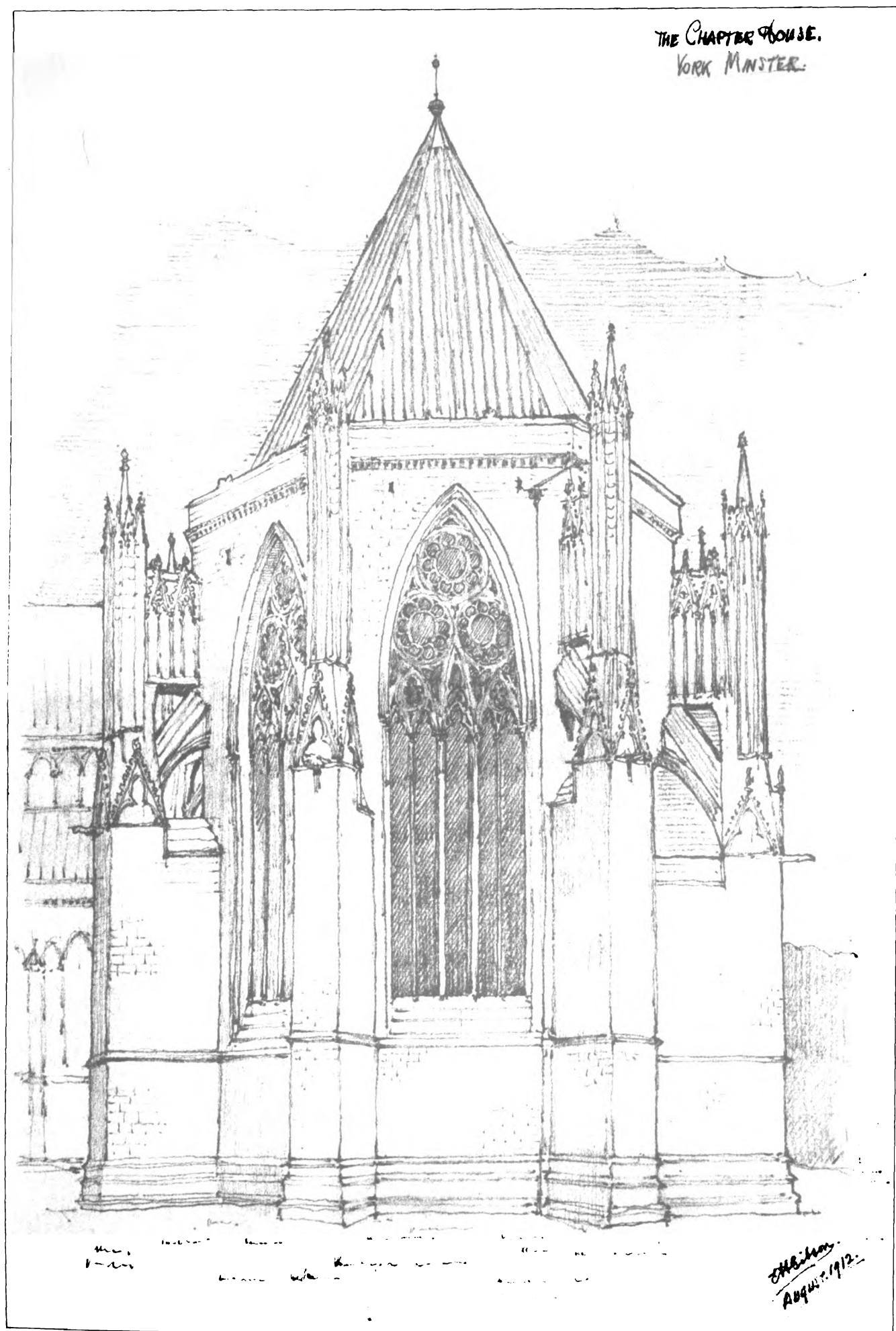
THESE panels, by Mr. Mark Rogers, R.B.S., were exhibited at the Royal Academy. That of the Centurion is in the possession of H. Oxenden Hammond, Esq., of St. Alban's Court, Hingham, Kent.

SKETCHES FROM YORK MINSTER AND NEWARK.

THE drawings of the Chapter House, York Minster, and the Parish Church, Newark, were made by Mr. E. H. Gibson, on his tour as holder of *The Architect Travelling Studentship* for this year.

1912.









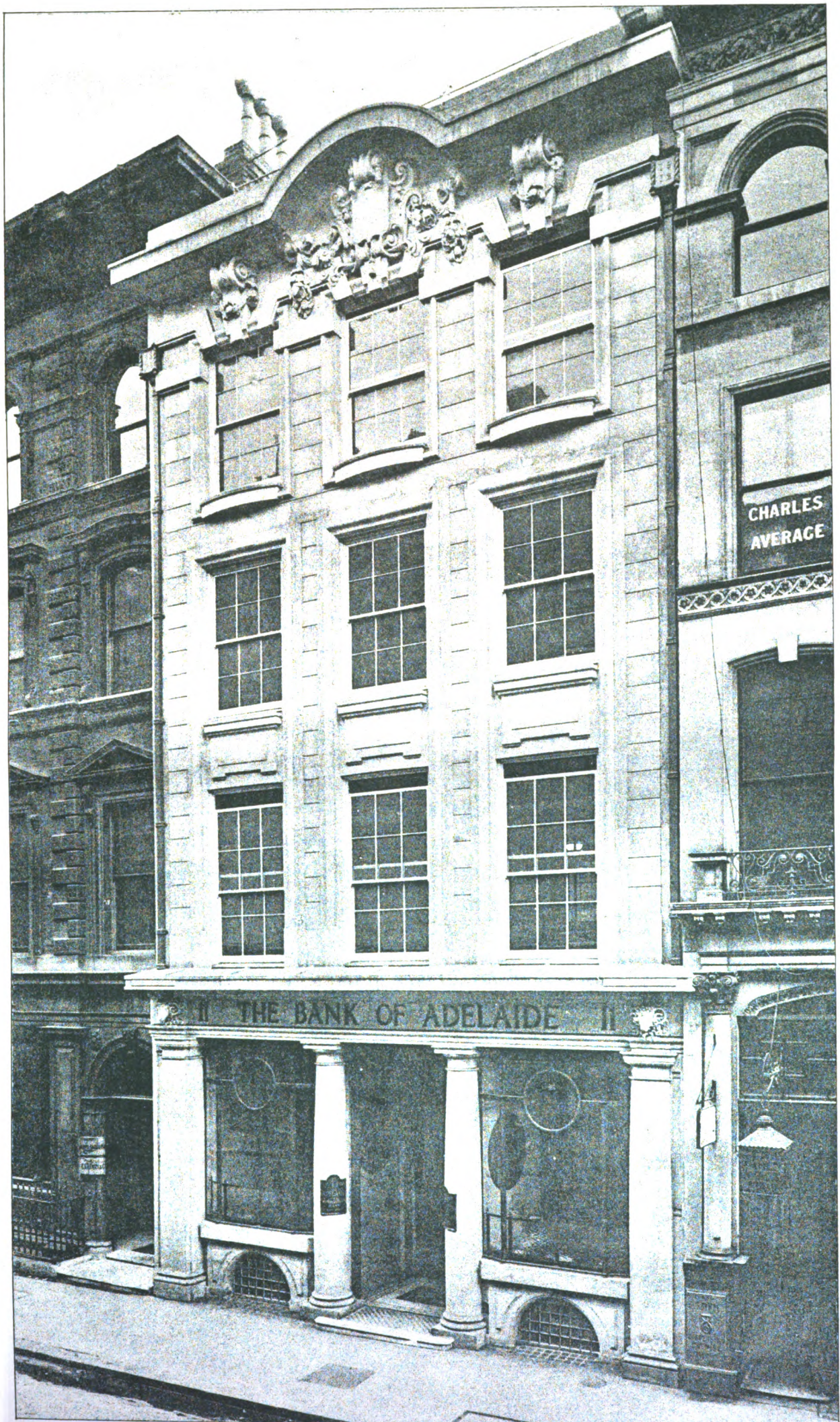
"INK PHOTO" SPRAGUE & CO. 176-69 & 70, DEAN STREET, SOHO, W.

TERRA COTTA PANELS IN WALNUT FRAMING:

MR. MARK ROGERS, R.B.S., SCULPTOR.



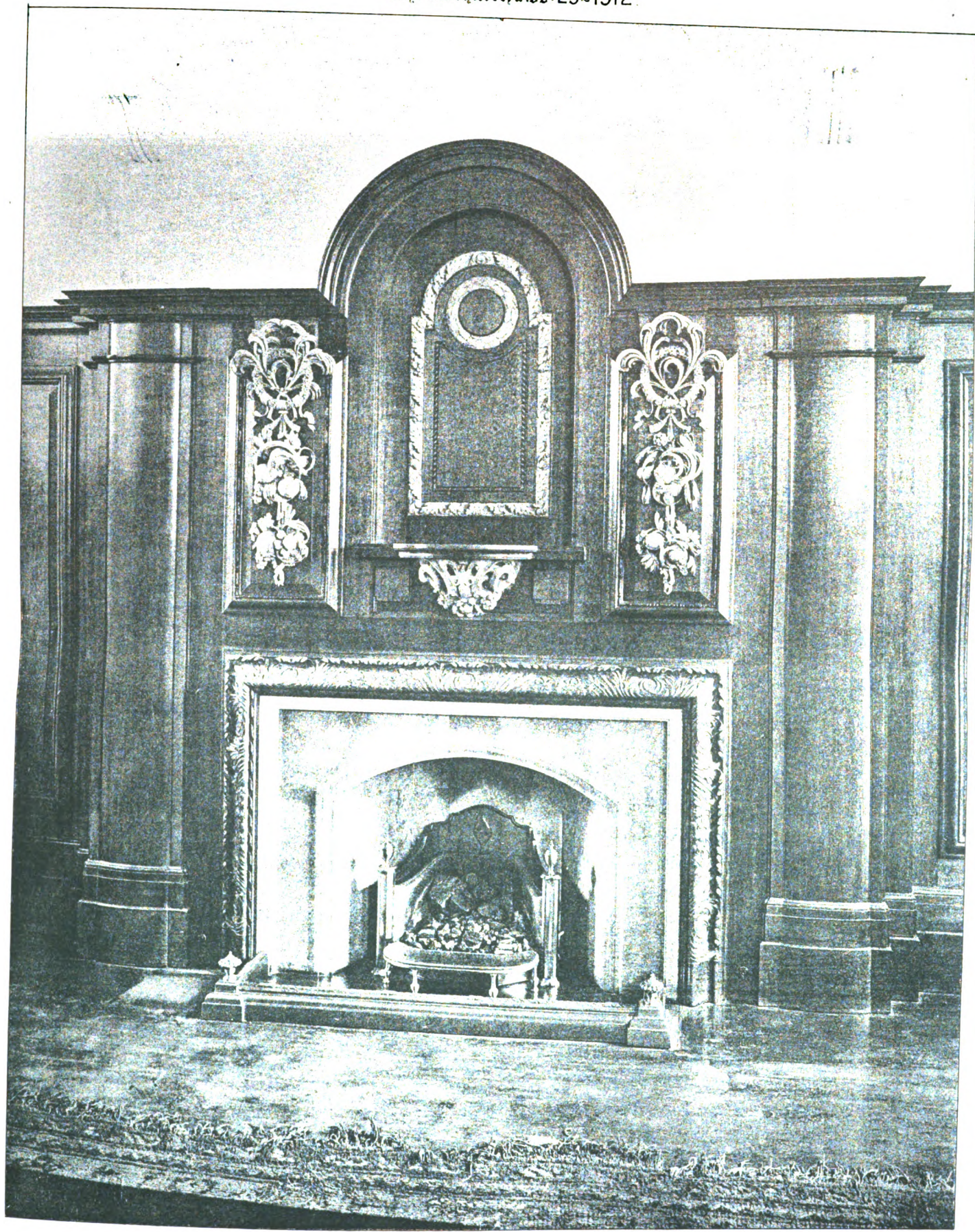
CHANNELS IN WALNUT FRAMING
MR. MARK ROGERS, 2000 S. 10TH ST., LOS ANGELES, CALIF.



"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

THE BANK OF ADELAIDE, LEADENHALL STREET, LONDON, E.C.

MR. LIONEL U. GRACE, A.R.I.B.A., Architect.



"INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

THE BANK OF ADELAIDE, LEADENHALL STREET, LONDON, E.C. BOARD ROOM FIREPLACE.
MR. LIONEL U. GRACE, A.R.I.B.A., Architect.





"INK-PHOTO" SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W.

PANEL IN OAK FOR A DOOR.

MR. MARK ROGERS, R.S.S. Sculptor.



THE PARISH CHURCH,

NEWARK.



Ellis
Aug. 1912



THE ARCHITECTURAL ASSOCIATION.

An ordinary general meeting of the Architectural Association was held on Monday, the 25th inst., Mr. Gerald Horsley, President, in the chair.

It was announced that the Athletic Club Dance will be held at the Wharncliffe Rooms, Hotel Great Central, on Monday, December 2, 9 p.m. till 2.30 a.m. Tickets, price 8s. 6d. each, including supper and refreshments, can be obtained in the office.

The following elections were confirmed: Messrs. S. G. A. Cockle (Dovercourt), G. M. Mackenzie (Westminster), and R. M. H. Philip (c/o Bank of Australia).

Mr. Gerald Horsley said that there were two matters which he wished to put before the meeting. The first was to call attention to the very interesting exhibition of prints and drawings of London, and also the exhibition on view in the gallery upstairs, showing drawings done in the A.A. schools during the past term, which would give a very good idea of what excellent work was being done there. Next it was his melancholy duty to refer to an event profoundly affecting them all at the present time—viz., the great loss which architecture had sustained in the death of Mr. Norman Shaw, which occurred a week ago. They should particularly take notice of this, not only because they were architects, but because Mr. Norman Shaw, in the early days of the Architectural Association, was one of their Vice-Presidents—about 1857. It was impossible for him (the speaker) to say how much they were all indebted to Mr. Norman Shaw, whose influence upon architecture had been so great. It was not too much to say that the whole course of modern architecture as known to-day had been directed by his genius and ability. He would therefore ask the meeting to support a vote of condolence with the relatives of the late Mr. Norman Shaw, R.A.

The vote was carried by the members rising in silence.

Mr. Gerald Horsley said that he had also to ask the members to pass a similar vote of condolence with the relatives of the late Mr. E. B. I'Anson. Mr. I'Anson had been a member of the Association for many years, and his work in the City of London and other places was well known. In Mr. I'Anson they had lost a man who was universally respected by all who knew him.

Mr. Horace Cubitt, A.R.I.B.A., P.A.S.I., then read the following paper, entitled:—

The Prosaic in an Architect's Work.

It will, of course, be admitted that an architect should be competent in all branches of his work. To such end we have now a most elaborate system of architectural education, and, apart from this, we are all, in some measure, students to the close of our days. But there is a tendency for study to be very largely confined to subjects which readily appeal to the imagination, and in consequence other subjects of less interest, but of very great importance in the work of an architect, tend to be rather neglected.

The statement that an architect should know his work must not, however, be construed to mean that every architect must be competent in regard to all classes of work that architects undertake to do. There are many branches of work occasionally carried out by architects which are not, in the correct sense of the term, architectural work. There is, for example, the valuation of property. It will surely be admitted that, although a scale of fees for this work is quoted in the Institute's Schedule of Professional Charges, a member of our profession when engaged in valuing property is acting not as an architect, but as a surveyor. The same applies also to the work of preparing quantities. An architect when executing such work is surely, for the time being, a surveyor. Other important instances where work frequently undertaken by an architect is in reality that of a surveyor are the measurement of the area of a building site or building estate, and the settlement of dilapidations. No suggestion is made that an architect should not be conversant with many subjects which come within the term "surveying." It will often be very helpful to him in his practice if he is able to undertake work of this nature, although in the larger towns he will do well to leave such subjects as the valuation of property and the preparation of building quantities to surveyors who specialise in these subjects. But such knowledge is in no way essential, whereas it is obviously of primary importance that an architect should be thoroughly acquainted with the carrying out of

all matters that correctly come within the scope of the term "an architect's work."

It may be said that it is difficult to know where to draw the line between true architectural work and surveying work that is undertaken by architects. But there is really no difficulty at all. An architect, as the designer of building work, should obviously be acquainted with all branches of knowledge that affect the work of design—using the word design in the correct sense of the word, and not restricting it as is so often done to the conception and elaboration of ornamental features. Beyond this his knowledge need not extend. It will be seen that ignorance of the various branches of work already mentioned will not handicap in the slightest the designer of building work. With valuations and dilapidations he is clearly not concerned, and his design will probably gain rather than suffer in execution, if the survey of the site and the preparation of the quantities are undertaken by some other person.

But an analysis of the process by which a design is evolved will show that there are other branches of work of very great importance to the designer, which are frequently incorrectly classed as belonging not to architecture, but to surveying or engineering. These branches of work, which cannot usually be mastered without considerable application and study, do not appeal to the majority of architects and architectural students. Hence, the wish and the thought being in the proverbial relationship, there is a tendency to regard a knowledge of such subjects as not essential to the equipment of an architect. Why, it is in effect said, should we waste on these prosaic subjects valuable time which might be better spent in gaining a fuller knowledge of art? But can this attitude be justified? A designer when called upon to deal with an architectural problem is surely required to have a knowledge not merely of proportion, architectural detail, and the customary methods of construction, but of all the practical requirements, restrictions, and possibilities that affect the work on which he is engaged. The evolution of a design is such an intangible process of catching up, weaving together, and elaborating ideas that arise in the brain that the designer can work freely and satisfactorily only if he has a thorough grasp of everything that materially affects his work. But, it may be said, this is expecting too much of the designer; surely it will be permissible for him to get the opinions of specialists on certain points, and then, if necessary, modify his design accordingly. Imagine a composer of organ music being compelled towards the end of his composition to call in various specialists in organ construction with a view to modifying his score where, as written, his advisers considered it unplayable. Or imagine such a man producing a moderate work instead of a possible much finer one, because of his lack of knowledge of the capabilities of his instrument. An architect who in matters vitally affecting his design relies on the advice of specialists instead of making himself conversant with all the subjects concerned is acting in a somewhat similar manner, and runs a similar risk.

Let us consider the chief of those subjects that are thought by many to be too unimportant and too prosaic to be worth the close and thorough attention of the exponents and students of architecture. Take, for example, the comprehensive requirements of the building law in our larger towns, and more particularly in London. Here we have an elaborate code which very materially affects the erection of every building. Consider an ordinary domestic building on an ordinary site, and it will be found that the position, height, and construction of the building will be very materially controlled by the requirements of the building law or by-laws. The building, for instance, must not extend beyond the frontage line; it must have the requisite amount of air-space at the rear; it must not, if situated in London, extend above the diagonal line; its walls must be of specified materials of specified thickness; its system of sanitation must be designed and constructed throughout in accordance with specified rules. All these points are met with in the design and construction of a building of ordinary everyday class. In dealing with special buildings further requirements are encountered. Large public buildings, for instance, are required to be planned so as to afford reasonable means of escape in case of fire, and to be of fire-resisting construction. In London the means of escape requirements apply to a very large class of buildings, and there are also special constructional requirements affecting warehouses, shops with dwelling-rooms above, tenement buildings, &c.

These numerous and far-reaching requirements have a very considerable influence on the buildings that we design. Possibly some of such requirements are open to criticism. If so, by all means let us have ample criticism, and, if it is

found to be justified, let us get the offending requirements either rescinded or amended. But the bulk of the requirements will doubtless withstand the fire of criticism, and in any case we are bound to conform to all requirements existing at the moment, whether good or bad. Seeing that this is so, surely it is not unreasonable to suggest that it is the business of every architect to have a good working knowledge of the requirements in the district in which he practises. But what percentage of London architects are well acquainted with the London building law?

It is becoming to be a generally accepted axiom by modern writers on architecture that the study of any style is of value in direct proportion to the pains taken to understand the spirit of which the architectural forms are the outcome. A consideration of Greek architecture will show a thorough appreciation of just limitations to have been one of the predominant characteristics of Greek designers. It may seem rather venturesome to suggest that the modern exponents of the Neo-Grec should, as one of the principal bases of their work, take to a study of the building law. Yet I cannot imagine a Greek architect commencing to design a building while having but a hazy idea of the requirements governing his work. In fact, a Greek architect with hazy ideas on any branch of his work is almost inconceivable. The clear-cut intellectuality of his age could not brook the kind of half-knowledge which to-day is so prevalent.

But it will doubtless be said—remarks to this effect are of everyday occurrence—that it is impossible for the average architect to become familiar with requirements so comprehensive in character as those applying in London, and that, after all, there is no real need for the architect to bother his head too much about such matters; if he goes wrong the district surveyor or the London County Council officials will soon put him right. In regard to the first of these two assertions, it must, of course, be admitted that a detailed knowledge of every single requirement is out of the question. Neither is such knowledge necessary to any person; for the details of any requirement every careful person will consult the exact text of the Act or by-law in question. But a general knowledge of the requirements is a very desirable acquisition, and is not a matter of very great difficulty. But close attention and study is, of course, required; it is not possible to become well grounded in any subject without concentration, and the London Building Acts cannot be mastered in a spirit of absent-mindedness.

As regards the assertion that the administrative officials will prevent the architect from contravening any requirements, this as a simple statement may be accepted at once. But as for the implied suggestion that their action will operate favourably rather than otherwise in regard to the building in question, such a desirable result will not occur in one case out of twenty. What most frequently happens is that the architect who is not well acquainted with the building requirements. What is to be done? The client is grieved to such requirements. When he has succeeded in obtaining a satisfactory design from his client's standpoint, and there are immediate prospects of the building work being commenced, he submits his plans to the local surveyor. If he is lucky perhaps only a few small modifications will be necessitated. But not infrequently he has the mortification to find that his building as planned contravenes a very important requirement—it extends in front of the general building line, or it has not the requisite open space at the rear, or the means of escape in case of fire are inadequate, or in some other important respects it is contrary to the building requirements. What is to be done? The client is impatient to get the building started. The architect has not the heart to spend a great deal of time in reconsidering his planning in the light of his new and dearly bought experience. The local surveyor is principally concerned in obtaining a compliance with the requirements. If this can be done without impairing the efficiency of the building he is admittedly pleased, but if it cannot he philosophically and rightly reflects that it is not his fault. All things tend to what in many cases are practically the inevitable. The pruning-knife is requisitioned. The design is ruthlessly lopped and carved here and there to make it conform to the requirements. The architect henceforth is convinced that all by-laws and building requirements are made solely for the exasperation of the profession. It never enters his mind that he is to blame for not having made himself acquainted with the requirements affecting his work.

The mention of the procedure of cutting back a building brings us rather naturally to the subject of the law regarding rights of light. This, like the building law, is often

considered to belong rather to the domain of the surveyor than that of the architect. But the great effect which this branch of the law has on the erection of buildings surely places it among the most important practical branches of an architect's study. Thousands of buildings are erected every year of which the heights, and thus to some extent the character of the elevations, are governed by the rights of light of neighbouring buildings. Architects should surely know to what extent they are able to build when concerned with a site thus subject to serious restrictions. Although the cases decided by the Courts are legion, yet, thanks to the decision of the House of Lords in the often-quoted case of *Colls v. Home and Colonial Stores*, the law on the subject is not unduly complex, and is within the understanding of any person who cares to give a little time to the study of it. An architect ought to have a reasonable acquaintance with the law on this subject, so that he can tell whether he is keeping within safe limits or whether the building that he proposes to erect is one of those on the borderline between what is and is not permissible. In dealing with a site subjected to rights of light it will often be necessary to make the maximum permissible use of the site, a borderline case being in such instance the obvious primary objective of the architect. Then, in the subsequent negotiations with representatives of the dominant neighbouring owner or owners, he can feel his way, and, if necessary, make some little concessions in order to dispose of any opposition that may be encountered. In matters of this kind an architect will surely produce a better building if he has a sufficient knowledge of the subject to enable him to act independently, and is not compelled at every stage to go to an expert for guidance.

A great deal of attention has recently been given by the profession to the law of contracts as affecting architects. It is undoubtedly a very important subject, although from the standpoint of architecture it may be considered to be of less vital interest than the subjects of the building law and the law as to the rights of light. For it is quite conceivable that an architect might erect a succession of fine buildings under forms of contract of hopelessly unsuitable and inadequate character. Or an architect might possibly delegate the whole of his work of this nature to his solicitor, and his buildings might be none the worse. But it is obviously not to the interests of the profession, and thus indirectly not to the interests of architecture for architects to gain a reputation for lack of business ability; neither is it desirable to allow any of our legitimate work to fall into the hands of lawyers. The law of contracts as affecting both the building owner and contractor, and the architect and client, is therefore a necessary subject of study for practising architects and for aspirants to the profession. There is also one special aspect of the study of various legal branches of our work which should not be overlooked. Familiarity with the interpretation of the law as expressed in the judgments of the Courts tends to produce an appreciation of the just value of words. In the majority of building cases, except to some extent those regarding rights of light, the decision depends almost entirely on the construction of a clause in a statutory requirement or contract, or in the interpretation of a judgment in a previous case. It is impossible for a person to give much attention to legal decisions without acquiring, unconsciously perhaps, a clearer form of literary expression. The value of this is, of course, considerable, having regard to the amount of correspondence which an architect's practice necessarily entails. Also it may be not unfairly contended that the habits of precision thus established are no inconsiderable asset in the practise of what has been termed the most sane of all the arts.

We now come to the question of construction. As regards those branches of the subject which are embraced within the work of the main building trades, the modern architect has generally a very sound knowledge. Indeed, in the case of brickwork, carpentry, and joinery it is not too much to say that many architects know much more of the technique of these subjects than the average mechanic. And that this is so is one of the hopeful signs in modern architecture. But how about the important matters in the erection of a large building which it is the custom to include in the general term "engineering"? Here it is quite the exception to find that the architect is sufficiently familiar with the work to be able to design and control it in all details. He usually is compelled to place such work, and thus to some extent his own reputation, in the hands of specialists. To a certain degree this action is justifiable. So many special matters are encountered in the construction of large modern buildings that it is quite impossible for an architect of other than most exceptional attainments to be thoroughly well

acquainted with them all. There is, however, a distinct line beyond which an architect ought not to go in delegating his work to specialists. If the special work is such that it can have no material influence on the general design and construction of the building, the specialist may be employed. Such matters as the technical details of electric lighting and hot-water heating of ordinary buildings may not unreasonably be delegated to specialists, for if this is done the resulting work will often gain by the arrangement. But, on the other hand, if the work is such that it affects the design of the building, the architect cannot rightly delegate it to anyone.

(To be concluded.)

MARBLES USED IN GREEK, ROMAN AND BYZANTINE BUILDINGS.*

(Concluded from last week.)

Up to the present we have seen but a faint reflection of Byzantine art; for the art itself we shall have to fight our way into Eastern Europe, where it appeared at the beginning of the sixth century so completely developed that we might imagine it to be of spontaneous origin, did we not believe in the theory of artistic evolution.

From what is known of the marbles used by the Romans, and with the aid of that remarkable description of the Church of Sta Sophia, Constantinople, written by a Byzantine poet in 563, there has been no great difficulty in identifying most of the marbles that still enrich the crowning glory of Justinian's efforts.

To what extent the builders of that church availed themselves of secondhand materials we shall never know, but we may assume that the idea of bands and panels for the plating of the nave was derived from Rome. The bands of the plating in the nave are generally lighter than the panels, but just above the skirting of the ground floor and that of the galleries is a well-defined band of Thessalian green. The use of alabaster, translucent and golden, for the lighter bands is remarkable; no doubt it gives a rich mellowness to the plating, and it may have softened the brilliance of the gold that is said to have been applied to the sculptured parts of white Proconnesian marble.

Although the possibility of a lavish application of gold to the sculptured parts cannot be overlooked, in view of certain literary evidence, it has not been proved, and the traces of gold and blue on the minor features of this and other Byzantine churches cannot settle the question.

A striking feature of the lower storey is the zone of black and red panels, with carved framing, that repeats in a measure the richness of the arcades.

All other churches pale into insignificance when compared with that of Sta Sophia, yet it is interesting to note how the decoration of the larger church served as a type for others in Constantinople and Greece down to the eleventh century. In these there is the same flat treatment of bands and panels; but, generally, instead of a brilliant edging of notched fillets, we find plain beading, occasionally cut into "bead and reel," around the panels.

Returning to the western shores of the Adriatic, in the seventh century, we shall find architecture not at all in a flourishing condition; and in the following century the proto-Byzantine style of Italy was altogether extinct. The Italian architects were thus left to their own resources, and the result was a mixture of Italian and Byzantine elements, architectural development chiefly depending on the former, decoration on the latter.

Excepting parapets, ciboria, capitals, and archiepiscopal thrones, there is but little marble decoration of this period to interest; the evolution of a new style was in progress; the transformation of the Italo-Byzantine into the Lombardesque.

In renovating the ninth-century basilicas the Lombardic architects retained the Italo-Byzantine marble enrichments, adapting them to the new conditions. Sculptured parapets, from screens and ambos, were set in the external brickwork as decorative panels: marble columns were multiplied for external arches and arcades; and triangular slabs of antique vari-coloured marbles were applied to brick friezes, as at the Cathedral, Murano.

The Italo-Byzantine work at Torcello, though inferior to the proto-Byzantine work at Ravenna, cannot be overlooked by the English student who has felt the inspiration of "The Stones of Venice."

* A Paper read before the Architectural Association on Nov. 11 by Mr. J. A. Marshall.

Unlike any of the other churches mentioned, the Cathedral of S. Mark in Venice has its exterior as well as the interior cased with marble. This peculiarity is mainly due to the fact that the Greek architect who planned the building had no hand in its decoration. He certainly did not dream of casing the outside with marble; though no doubt he assumed that the interior would be so treated, probably in the manner of those churches in Greece and the Far East that exhibit fully-matured schemes in strict conformity with the structural lines of the building. This unity of purpose was not, however, destined to be realised; and, as Ruskin has said, "the church of S. Mark became rather a shrine at which to dedicate the splendours of miscellaneous spoil than the organised expression of any fixed architectural law or religious emotion."

When the structure was finished in 1071 agents were sent everywhere for marbles for the paving, but thirteen years later this elaborate tessellation was still unfinished.

The columns are mostly slender shafts of Proconnesian marble, sometimes suggesting in their veining the transverse markings on the stem of a silver birch-tree; but in the shadow of the aisles are clustered some venerable and sturdy shafts of grey granite, probably brought from a Byzantine church in Sicily for the earliest basilica at Venice.

Although S. Mark's is a church of two storeys, the marble plating of the interior rises nowhere higher than the parapets of the galleries. The arrangement of the slabs is generally artless, without any definite scheme beyond that imposed by using secondhand material in the simplest possible way; and it could not be more opposed to the expression of organic construction. The slabs are merely fixed side by side, in tiers, like vertical strips of boarding, with the veining "opened out."

Looking beyond the columns of the nave we see on the walls of the aisles the rich effect of studied design. Instead of monotonous ranges of narrow slabs, the long stretch of plating, up to the string at the level of the capitals, is arranged in seven upright divisions, defined by different marbles. Above the string the white Proconnesian frieze is enriched with the well-known series of mosaic panels that suggest enamelled plaques of the twelfth century.

Comparing the arcades of S. Mark's with those of Sta Sophia, Constantinople, and the Siculo-Norman churches, the Venetian example seems to suggest a compromise in the manner of its decoration; for, instead of the arches being entirely cased with marble or covered with gold, the conditions seemed to necessitate the use of both materials, the mosaic being confined to the underside of the arches by the marble architraves.

The little chapel of S. Isidore, at the end of the north transept, has a special claim on attention. Finished in 1355, it exhibits the characteristics of Venetian art at its best. Below the string at the springing of the barrel-vault, gleaming with gold, the side walls are plated with large upright slabs of Proconnesian marble, alternated with narrower strips of purple porphyry, and the green breccia of Thessaly. An unmistakable Venetian touch is seen in the little piscina, with its Arabic arch and roundel chiselled into a Byzantine fancy. Contrasted with this simple and flat decoration is the vigorous expression of the Pisan school, at the east end of the chapel, where the sculptured tomb of the saint occupies a recess behind the altar.

Local marbles, though not unimportant in the decoration of S. Mark's, became more prominent during the progress of the Venetian style, and in Verona and the cities of Tuscany they were exclusively used for external decoration in a way quite original. The limestones were got chiefly from the hills around Verona. The quarries were worked by the ancient Romans, who, in the time of Diocletian, selected a flesh-coloured variety as a building material for the amphitheatre at Verona.

The façade of S. Mark's is bleached, and in many places the original tinting is obscured by corrosion and "the golden stain of time"; yet, when seen from the opposite end of the Piazza, the building presents a delicate suggestion of opalescence, heightened by contrast with the deep gloom of the porches. As you get nearer your attention is focussed on the four bronze horses that once stood in the agora at Chios, and you feel that the art of the Grecians is eternal.

You try to imagine the church first as it stood, for two centuries, without any decoration, and then when the lower storey, in the thirteenth century, was marked with the spoils of conquest, while the upper parts remained venerable-looking and bare.

You examine with interest the details familiarised by Ruskin half a century ago.

Finally, when you look at the later fantasy of the upper storey you realise that the exterior of S. Mark's was a reflection of the wealth and power of the Venetians, and that it stands alone, not only in the methods of its production, but in its final results.

Limiting our attention to the thirteenth-century renovation of the lower *façade*, as most relevant to our subject in point of date and purity of style, we note, firstly, that the main structural lines, due to the plans of the Greek architect, were followed, but the organic decoration, due to Lombardic influence, was entirely disregarded.

Before the renovation the central porch rose unrestrained, as it does to-day, but, for the new scheme, it was widened and thus made more important. The lavish application of columns to the piers may perhaps be regarded as an elaboration of Lombardic or Romanesque tradition, but the omission of arcading is without precedent, unless we admit the trabeated portals of Arles and S. Gilles.

To the thirteenth-century renovators are due those elegant extensions of the main *façade* that give a sense of security at the angles of the building. Respecting the plating, we note, where it is not obscured by columns, how it has been made interesting beyond the intrinsic beauty of the marble by using it as a background or setting for sculpture and panels. Plain unbroken spaces are avoided by some conceit strictly opposed to the natural lines of the architecture; if the space is a spandrel, it has a panel or niche in the middle of it; if a tympanum, the curve of the arch is opposed by straight lines; if rectangular, it is inlaid with discs, panels, and borders, like a pavement. Some of these compositions are artistically beautiful, others are ingeniously clever; though it is probable that many of the older sculptured slabs occupied corresponding positions on the brick fronts of the eleventh century, just as Lombardic panels are found decorating other churches of the Lagunar cities. The panels are invariably surrounded by borders of red or green marble, and the superficial character of the plating around them is candidly expressed by the use of narrow upright slabs. The influence of Byzantine refinement is also indicated by the absence of heavy mouldings, and the substitution of dentilled strings and archivolts and notched fillets.

The columns present a miscellaneous collection of marbles, but their disposition on the building shows that they were selected in some cases for their colour. Thus the central porch is made regal by shafts of purple porphyry, contrasted with others of white marble, and these support slender shafts of black and white breccia, now mellow with age. On each side of the central porch, facing the Piazza, are shafts of Thessalian green, and Greek or Proconnesian white, supporting others of white only. The disposition of the remaining columns is somewhat promiscuous, though it may be noted that those on the right of the main *façade* and on the return front facing the south are of richer marbles than those on the left and north; indeed, the south front, though restricted in length by a remnant of the old Ducal Palace, was always more important than that facing the north.

The interior of S. Mark's was the last in Italy to be plated with marble in the simple Byzantine manner, but the innovation, from the Byzantine point of view, of casing the exterior became an established practice. This reversal of the old order of things was due to developments in architecture, and to the rise of the various schools of painting. In the course of time marble decoration assumed more and more the forms of solid construction; its legitimate application was lost sight of, excepting a very brief period at the end of the fifteenth century, when the Lombardi of the Renaissance attempted to revive it.

It now only remains to glance at that peculiar phase of Byzantine influence on decoration to be met with in the churches of Sicily, built during the Norman occupation.

The result of a fusion of Byzantine and Saracenic traditions, this decoration is unlike anything we have yet seen. Apart from the richly-inlaid ambos, screens, and pavings of these churches, the marble plating is invariably limited to a high dado on the walls. Above the dado and the gilded capitals of the columns the walls and arches are entirely covered with mosaic.

The distinguishing feature of the plating is an Oriental or Saracenic application of geometrical patterns in glass and marble mosaic, a type of inlay repeated at Salerno, Ravello, and elsewhere, for pulpits, &c., and closely allied in style to the work of the "Cosmati" school of Rome.

The most beautiful example of Siculo-Norman art remaining in Palermo is the Palatine Chapel, built by King Roger II. in 1143. The chapel is small, and so are its windows, but when the eye has mastered the prevailing gloom

the effect is gorgeous, the mosaics scintillate, and the deep stalactite ceiling of the nave has a lurking splendour of purple, peacock-blue, and gold.

Of the same date, and similar in its decoration, is the church known as "La Martorana," in the same city.

After the mysterious beauty of these little churches the spacious and brilliantly-lighted interior of the Cathedral of Monreale is quite surprising. Built at the end of the twelfth century by the last King of the Norman dynasty in Sicily, this church is more transalpine in its decoration than the earlier churches in Palermo; yet this is not so evident in the marble decoration as in the art of the mosaic-worker and the sculptor. Indeed, the high dado all round the church differs only from the earlier work in having no slabs or roundels of porphyry, the plating being entirely the greyish-white of Proconnesus arranged in narrow slabs, with intervening strips of mosaic edged with plain white beading. The deep frieze, inlaid with mosaic of "arabesque," and varied pattern, is also repeated. The vertical lines of this dado adapt themselves to the curve of the apse as naturally as a curtain hung on the wall. The mosaic is threaded with thin lines of cream-coloured stone that soften the harshness of the vitreous tesserae, and have the same artistic value as the strips of pearl used in the inlay of the Arab work in Cairo, about a century and a half later.

Mr. A. E. Henderson said it gave him very great pleasure to propose a vote of thanks to Mr. Marshall. Knowing as he did a great number of the buildings mentioned, the lecture had made him realise how little he knew when he went there, and also made him wish to go again and study them with the eyes and knowledge of Mr. Marshall. The lecturer had refrained from mentioning any beautiful examples of marble in their own ancient city. But within a few hundred yards of the Association premises they could go and study those marbles, for in Westminster Abbey there was nearly every marble mentioned in the paper. If they knew more about the materials in the Abbey would they not admire it more? He had been very much impressed when he read how certain columns were moved from place to place. He wondered whether the enormous verd antique columns in Sta Sophia were there before the architect designed the building; that was to his mind very probable. Mr. Marshall had touched upon the difficulty of moving these columns in Rome. A similar case had occurred in London—Cleopatra's Needle. The surveyor to the Metropolitan Board of Works reported that he would not guarantee the safety of the sewers if it were moved to the British Museum. As to the best finish for marble, his (the speaker's) opinion was that it should not be brought to a wax polish, as it then looked tawdry. Alabaster was an exception. The weathering of marble was always interesting. Mr. Marshall had gone into the history of marble, but had not told them the best way to treat it in design. He could only hope that some day he would favour them with a paper on how to design marble decoration on walls. Old buildings did not represent modern ideas on the subject. They wanted to decorate walls in some fashion that would please clients and please themselves.

Mr. W. S. H. George said that Mr. Marshall had suggested in the first part of his paper that the Greeks did not use any other than white marbles. As a fact, in certain buildings they used black. The lecture also threw doubt on the use of colour, and suggested that it was only done to cover the grey streaks. But he (the speaker) had seen a lot of work just after it was dug up, and he felt sure that it had been originally coloured, and that that was quite the right thing. Colour was put on from the Archaic period to the best period of the Hellenistic Age. For instance, there was the sarcophagus of Alexander at Constantinople. He would like to plead for the use of colour on marble. Where it could be employed it was an added grace. To an ancient Greek a building without colour would seem like a concerto without accompaniment. Byzantine workmen were often far from perfect; they were quite clumsy in Sta Sophia, where there were many pieces of design which it was to be hoped no one present would pass. Students must recognise that the interest of Byzantine work was historical rather than that it would serve as a model. He felt sure that the Byzantines used colour and gold on white marble.

Mr. Horsley said that the paper seemed to him quite a standard work on the subject. He would ask Mr. Marshall if he would allow the very fine specimens of marble which he had brought with him to remain for a time in that room, so that members might inspect them under daylight conditions.

The vote of thanks was put to the meeting and carried with acclamation.

Mr. Marshall, in acknowledging the vote, said he had only touched on the fringe of the subject. But he hoped it would be at all events a starting-point for the younger members to commence their inquiries from. He entirely agreed with Mr. Henderson's opinion that marble should not be polished to the greatest degree it was capable of. His own rule was that the polish should be just sufficient to show the crystalline character of the material. He had been very greatly interested in the statues found in the Acropolis, and he had meant to imply that those statues were always coloured. In many temples where the decoration was painted it protected the surface until the present day.

THE NEW AUSTRALIAN CAPITAL.

By W. R. DAVIDGE, F.S.I., A.R.I.B.A., A.M.Inst.C.E.

THE laying out of the new capital of Australia is a subject in which the Garden Cities and Town Planning Association has taken the keenest interest from the time the idea was first mooted. The proposal is one that must meet with our unanimous support and sympathies, both in its successful floating and subsequent welfare.

For years Mr. Ebenezer Howard and the other pioneers of the Garden City movement have been urging—insistently urging—that the only satisfactory way of dealing with the huge growth of our towns is to start afresh on a virgin site free from the insistent restrictions and enormous cost which are involved by any improvement of existing towns. Still more advantageous is it when the proposal has behind it the full power of such a community as the Commonwealth of Australia, and when the community itself is sole owner of the new township and free from the clash of conflicting private interests, and, furthermore, with all the lessons of the past to know what to avoid. The idea of forming a capital city on such a scale is almost unprecedented in modern times; the nearest example is, of course, the planning of Washington and the surrounding Federal district of Columbia in 1790. Although not in any sense intended as a criticism, it is impossible in dealing with such a subject to altogether avoid giving some expression of opinion on the points touched upon. It is inevitable that on such a subject opinions on matters of planning and detail will be considerably at variance, and as far as possible the broad outlines only of the scheme will be considered.

The Commonwealth of Australia was constituted by the federation of the six Australian States in 1900. In order to avoid any idea of rivalry between the existing great towns of Australia it was determined that the seat of Government of the new Commonwealth should be situated in a special Federal territory to be formed, the stipulations being that it should be within the State of New South Wales and not less than 100 miles from Sydney.

After some years of careful investigation the district of Yass-Canberra was selected as the most suitable for the Commonwealth territory. One of the special requirements for the new capital was that its water supply should be entirely within the control of the Commonwealth Government, and hence the district was specially selected as one embracing a good catchment area of water supply.

The capital site itself at Canberra is situated on the Molonglo River, about 150 miles south-west of Sydney, the proposed water supply being obtained from the water shed of the Cotter River, distant some miles from the capital.

The site having been selected, a careful contour survey was made of the surrounding district, and public invitation given to architects and others to submit competitive preliminary designs for the lay out of the city and the allocation of sites for the principal buildings. A Board of three assessors consisting of an architect, an engineer, and a surveyor was appointed to examine the designs and report to the Minister for Home Affairs, with whom the final adjudication was to rest. In practice it will be remembered that in consequence of the objection of the Royal Institute of British Architects to this arrangement the English members of the profession held aloof from the competition.

The eventual award of the professional assessors was not entirely unanimous, one of them issuing a minority report with reference to the design selected by him.

The awards made were as follows:—First premium, £1,750, Mr. W. B. Griffin, Chicago; second premium, £750, M. Laarinen, Helsingfors, Finland; third premium, £500, M. Agache, Paris.

The design selected in the minority report was by a Sydney firm of architects, and this has since been acquired by the Commonwealth Government.

The first premiated design is, naturally, the one of most

interest. The scheme is almost entirely formal in character, and arranged in strictly geometrical pattern. The town itself, already divided into two by the river Molonglo, is to have two main centres, that on the north side of the river to be devoted to civic matters and that on the south to the buildings connected with the Commonwealth Government.

Dominating the south side of the river, on a prominent rocky spur from the Narrabundah range, is to be placed the Capitol, or executive Government building, the Parliament buildings being placed on a slightly lower eminence 90 feet below, and the various Government offices on successive terraces reaching down to the river front.

Around the central building of the Capitol is situated a circular central park rather over half a mile in diameter, and from the circular avenue surrounding the Capitol radiate eight main avenues each 200 feet wide. Two of these main avenues cross the river by means of bridges, one going almost due north to the civic centre and the other north-easterly to the railway station on the opposite bank. The axis line of the whole plan lies between these two main avenues, and is arranged to terminate in the summits of the mountain known as Ainslie to the north-east and the distant peak of Bimberi to the south-west of the city.

From the civic centre north of the river radiate six similar main avenues, and with the expansion of the town it is apparently proposed to construct further suburban centres at intervals of every two miles or so, with the same six or eight radiating avenues carried on almost ad infinitum—if no further.

Napoleon I. is credited with being particularly struck with the advantages of the "roundpoint" with a large number of converging streets in order to provide a spot at which, if necessary, cannon could be put to keep the people in order. The Commonwealth Government of Australia, in introducing such a system of streets radiating from the Government building, has no desire to keep such an eye on the people, but it is possible that the people may find the system of advantage to keep an eye on the Government.

In addition to the public buildings of the Government Departments provision is made in the design for a University building, Law Courts, National Gallery, Museums, Technical Colleges, &c., most of these being arranged on the northern side of the Molonglo.

The point that first strikes the observer in the prize design is the great use made of the river frontage. It is proposed by damming back the river to form a series of five large lakes along the whole front of the town, the total water area of the lakes being nearly five square miles. There can be no question but that if this can be done it will vastly improve the appearance of the city. The water frontage to the public buildings between the two main avenues before referred to will be nearly a mile in length, and the spectacle can be pictured up of terrace upon terrace of buildings rising from the water's edge up to the Parliament buildings, and crowning all the stately dome of the Capitol.

If the necessary water area for the lakes can be provided, this will be undeniably fine, but, unfortunately, there is some little doubt of its practicability. The Molonglo is a somewhat sluggish stream flowing between steep banks. The river is ordinarily very shallow, and during periods of prolonged dry weather the river ceases to run. Though in times of sudden rain the flow of the river is liable to be swollen by heavy floods, it is somewhat doubtful whether the summer flow will be sufficient to make good the evaporation of such a great area of water as five square miles, remove the risk of stagnant water or mud flats, and at the same time provide for sufficient flow in the stream below the city, into which the sewerage must naturally discharge.

Such a point cannot, however, be definitely decided without very careful observations of the flow of the Molonglo over a period of some years. It is much to be hoped, however, that this portion of the scheme will not have to be curtailed.

The flooding over the whole of the flat low-lying lands in this way may, however, awake too late the inhabitants of Canberra to the fact that they have flooded the only available site for the racecourse, which is such a popular feature of Australian towns.

Many economies will undoubtedly be possible in the actual execution of the work, particularly in the construction of the roads. Numerous instances exist in which thousands of pounds could be saved by a slight rearrangement of the roads or relaxation of the rigid geometrical pattern. The formal framework of triangles, circles, and octagons has been most skilfully adapted to the site, but it is impossible to thus attempt to tamper with Nature and rule the hills into line without vast expenditure of money.

The great width of the main avenues is followed out in proportion in the ordinary roads, although, of course, to nothing like the scale of the spacious 200-foot wide avenues. Such roads and avenues will naturally be exceedingly costly to construct and maintain, and the Federal Government would do well to take note of the example of Germany, where the huge cost of roadmaking has forced up the price of land to an almost prohibitive figure and compelled the barrack-like form of tenement building in place of the low bungalow type beloved by the Australian.

The circular ascents shown on the plan in lieu of the zig-zag method of running a road up a hill are distinctly clever, and show one method in which the formal circular outline may be used to practical advantage. The distances from point to point in the city have already been touched upon, and the placing of the railway station at a distance of a mile and a half or so from the centre of the town will undoubtedly require reconsideration. The position of the railway itself, too, seems to preclude any rapid development of the south-western residential district, the inhabitants of which will apparently be more than three miles from the nearest station, unless an additional railway line is constructed. In any case, too, the sharp curves in the railway to suit the line of the streets will require reconsideration in actually laying down the design.

The subsidiary roads are almost entirely arranged in grid-iron fashion, regular rectangular blocks occurring along all the radiating avenues, the intersections of the radiating streets being modified by construction of streets in octagonal or hexagonal pattern, in every case strictly geometrical and with but very slight consideration being given to the contours of the land.

In this matter of radiating streets we seem to be very little advanced since the days when Carlsruhe was laid out a couple of hundred years ago, and this same octagonal arrangement of the streets surrounding the various centres is seen in Wren's plan for London and in the Far Eastern one-time Russian town of Dalny. Let us contrast this with the charming irregular lines of the older German cities and the delightful way in which the picturesque corners and quaint nooks can be made to provide a fresh feast of delight to the artistic eye. The vision, too, of these unending circuses and star points spreading in the future far away into the distant suburbs awakes one to the octopus-like growth of every one of our great cities and the necessity for girdling them round with an open belt of country to give some little breathing-space to the workers and travellers ere they plunge from one seething pot of a town into the seething cauldron of the next.

The Commonwealth authorities would do well, too, to consider the question of possible land speculation very carefully. The earlier years of the city of Washington are stated to have been very much hampered by speculators, who bought up all available land, and held it up at high prices, thus greatly retarding the growth of the young city.

The community, as themselves the owners, will in this new city have a great opportunity of keeping absolute control of the building and growth of the city, and if they are wise they will not lightly let out of their control, by sale or otherwise, the powers which they at present possess.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

THE opening general meeting and smoking concert of the Leeds and Yorkshire Architectural Society was held at the Queen's Hotel, Leeds, on Thursday evening, November 21.

The President, Mr. A. E. Kirk, occupied the chair, supported by Mr. J. F. Walsh and Mr. G. F. Bowman (Vice-Presidents), and Messrs. J. W. Connon, H. Perkin, W. Carby Hall, H. S. Chorley, S. D. Kitson, and a number of members, associates, and friends.

The proceedings opened with the President's Address, followed by a vote of thanks from Mr. S. D. Kitson, seconded by Mr. H. Perkin and supported by Mr. G. F. Bowman.

Prizes to successful students in the annual competitions were then distributed. Mr. W. Butler was awarded a £3 3s. consolation prize for measured drawings of Newland Hall, near Wakefield, the silver medal not being awarded.

The first prize of £3 3s. for design was awarded Mr. W. Voelkel, and the second prize to Mr. Douglas Bowman.

The Society's sketching prize of £2 2s. was awarded Mr. C. B. Chadwick, who also received a £1 1s. prize from the Sketching Club.

An excellent concert, arranged by Mr. D. Bowman, filled

up the rest of the evening, Mr. F. D. Whitehead presiding at the piano. Proceedings terminated with a vote of thanks to the artists by Mr. T. Butler Wilson, whose speech was most amusing, clever, and a fitting end to an enjoyable evening's entertainment.

Mr. A. E. Kirk gave the following Presidential Address:—

Gentlemen,—I should like to thank you for the honour you have done me in electing me your President. I feel the responsibility, and can assure you that I shall do all in my power to help on the work of the Society. I wish to thank our late President on behalf of the Society for the enormous amount of energy he put in during the two years of office. Upon the Hon. Secretary's shoulders fall all the work of the Society, and I wish to say how much we appreciate all that Mr. Whitehead has done for the Society; he is most businesslike and methodical. Among the many duties which fall to the lot of a Secretary, that of arranging the syllabus for the winter session is not always the easiest. After carefully selecting a dozen well-known men and writing and offering them dates, the poor Secretary finds that most of the dates clash, and that he has the greatest difficulty in fixing up his programme. I am glad to say that our Secretary has overcome all these difficulties this year, and has arranged a most interesting syllabus. You will notice we have arranged that there is a three weeks' interval between lectures; this gives fewer lectures, and by so doing it is thought that better attendance may be obtained. With regard to the attendance of late, I may say for the last few years it has been bad. Why it has been bad it is difficult to say; some thought that the time was inconvenient, some said that holding the lectures in Park Cross Street was not very central. We have tried different times, and also different places, for meeting, but without marked effect. This year they will be held in the Leeds Institute at the usual time, and I do hope that all, and especially the students, will make an effort to attend. One paper which should interest the students is provided by two of our members, Mr. Foggitt and Mr. de Jong, who are giving an exhibition of their work in Italy, whilst travelling as Tite Prizeman and Soane Medallionist. During the summer the Society, along with the York Architectural Society, visited the new Training College at Beckett's Park. Our Society visited York as the guest of the York Architectural Society, and visited the Treasurer's house, Museum Buildings, and an exhibition of Moore's pictures, which proved most enjoyable. I hope that similar excursions may be arranged next year, because at such gatherings we meet professional brethren, and are able to discuss matters of mutual interest. The work of the Sketching Club, I am afraid, has been spoilt by the fearful weather, but visits have been made to Anathorpe Hall, Whitkirk, Antwerp, and Edinburgh, and some very interesting work done.

I am sorry to say that there has been a lack of competition for the Society prizes this year. Probably that may be explained by the large amount of work now expected from the student. Next year it is proposed to utilise the R.I.B.A. design for the Society's class of design, and by so doing it is hoped that there will be a large entry. The silver medal for measured work has not been awarded this year, only one set being submitted by Mr. W. Butler for measured drawings of Newland Hall, near Wakefield. The drawings are neatly executed, but some of the full-size drawings do not scale the figured dimensions, which shows lack of care, and it is a pity that the staircase, mantels, and plaster work have not been measured. The Council have awarded Mr. Butler a consolation prize of £3 3s. In the design class the competition has not been so good, but some clever work has been submitted. The first prize goes to Mr. Voelkel and the second to Mr. Bowman. The subject set for construction was not a very difficult one, but there again no designs have been submitted. The sketching prize has only produced one set of sketches; this perhaps is accounted for by the bad weather this summer, and only one set has been submitted for the Sketching Club prize. Mr. C. B. Chadwick has been given both prizes for some very clever pencil work. There is no competition for the essay prize, which is very disappointing. The subject was "The English Garden: Its Features and Furniture," which, I should have thought, was a most fascinating subject. This year commences the revised arrangements for the R.I.B.A. examinations, the principal features of which are schemes of designs for Final, also inclusion of designs in the Inter. This shows more consideration for the subject than in the past, and puts design in its proper place in the examinations. The thesis for the Final gives great opportunity for individual work.

I should like to bring to the notice of the junior members of the profession the formation of an Insurance Approved Society by the A.A., Surveyors' Institute, and R.I.B.A., particulars of which can be obtained from the Hon. Secretary. The establishment of a British School at Rome is an accomplished fact, the particulars of which have been published. This should be a great incentive to the students to spur them on to gain the highest reward. It is to be regretted that the Architectural School at the School of Arts, Leeds, has not the privilege of nominating a candidate, but it is hoped that some day it may be won by a Leeds student. The Leeds School of Architecture, under the direction of Mr. Coombs, is doing very good work, and a very thorough training is to be gained there. There are rumours in the air that the city contemplates at an early date making provision for all the different departments of the city being housed in one building. Since the Municipal Buildings were built Leeds has increased, and naturally the different departments have expanded and new ones have been created. At the present time they are scattered all over the city, which means not only extra work for the officials, but also great inconvenience to the general public. Many sites have been suggested in the Council, and also in the Press. Of course, most of the criticism has been based on the cost regardless as to the suitability of the site.

I know that this is a most important matter, but, seeing that the scheme will require something like a quarter of a million to carry out, surely that which would add to the dignity of the city with such a large outlay at stake, and a less advantageous site, is not worth considering. Whatever is done should be worthy of the city. Bradford, our next-door neighbour, is going in for an extensive scheme of town planning in the very centre of the city, and, unless Leeds wakes up, it will be left behind. To my mind, and I think you will agree, the only site for such a building is on the south side of Victoria Square. This would give a glorious opportunity of architecturally treating Victoria Square, and making it worthy of the city. If these buildings are put elsewhere I am certain that Victoria Square will be left for all time a desert of cobbles with a small oasis in the centre—Mr. Brock's statue of the late Queen Victoria.

The enlargement of the General Infirmary will do great things by opening up the north side of the Town Hall. Mr. Kitson's plan shows a small square and gardens, which promises to be an interesting lay out. Just a word with regard to the town planning which comes into this large scheme. The plan shows a fine wide street running from Calverley Street in a crescent joining Fenton Street at Carnaby Street, on the south side of the artillery barracks. This seems to finish nowhere for a street of such importance. I would suggest that it be carried forward to where Hilliary Street joins Woodhouse Lane, and a circus formed there, then the traffic would be diverted from the tram-lines straight into the centre of the city, and I think that better gradients than Woodhouse Lane and Cookridge Street could be obtained. I know this is going beyond the present infirmary scheme, but I think in a piece of town planning of this magnitude there should be some finality shown to a street of this importance.

A new curator has been appointed at the Art Gallery, and Leeds has been lucky to obtain the services of Mr. Rutter, under whose guidance the whole Gallery has been renovated, the pictures re-hung, and the sculpture rearranged; the effect is most pleasing. I hope at some future time we may have the pleasure of hearing a paper read by Mr. Rutter, or, better still, if he would be persuaded to take the Society round the Art Gallery and criticise the different schools of painting shown there it would be most interesting and instructive to us all.

A review of the past year's work amongst our members is not very inspiring. The trade of the country, as shown by the Board of Trade returns, is good, all industry being fully employed except the building trade. It is said that the building trade is always the last to feel depression, and the last to benefit by the revival. During the last few years that is certainly true; there seems to be a great lack of confidence in the public to invest money in the land and buildings. Leeds, in common with other large towns, was largely over-built during the last boom, and here builders were deceived by the rate of increase of population, which, as everyone knows, fell far short of expectations when the census was taken. I trust that during the coming year the building trade will feel the industrial revival, and that we shall all be fully employed.

The most important building enterprise in the neighbourhood, the City of Leeds Training College, has been finished this year, and is now occupied. The grouping of

the buildings is most satisfactory. No pains have been spared in working out the smallest details. As a modern educational institution it can be said to be the most perfect of its kind; already it has been visited by distinguished educationalists from all parts of the world. Leeds is to be congratulated on the enterprise and energy displayed in being able to carry out such a large scheme successfully.

That hardy annual registration again occupied an important position in Mr. Blomfield's Presidential Address before the Institute, and I think he strikes the very note of registration when he states, "A sound and thorough professional training is the basis on which any form of registration must be founded. If we are to obtain public and formal recognition of the fact that architecture is not an art that can be practised by Dick, Tom, and Harry with advantage to the community, and that there is a difference in kind between the work of the trained designer and the architectural efforts of the gentleman who combines the practice of architect, auctioneer, and estate agent, we shall see to it not only that our present standard is maintained by all who enter our ranks, but also that it is slowly and surely raised, so that there can be no question as to who is or who is not qualified to undertake the work that legitimately falls on to an architect."

The Institute is pledged to the policy stated in the Report of the Committee of 1907, but very little heading has been made during the last four years. Of course, I know the subject bristles with difficulties, but many converts are being made every year. We in the provinces have perhaps felt the necessity more than the London men, but I am glad to think they are coming over by degrees. The new Council have appointed a large and carefully-selected Committee to consider the whole question, which contains, I am glad to say, a number of representatives from the provinces, and I sincerely trust that their deliberations will bear early fruit.

A circular letter from the R.I.B.A. has been sent to all the allied societies stating that the Council are anxious that the control and supervision exercised by the allied societies all over the country should be as complete as possible, and that some of the provinces allotted to them are too large and that their organisation cannot adequately deal with more than a certain area. They also drew attention to the fact that there are a large number of members and Licentiates of the Royal Institute who do not belong to the allied societies, and ask for suggestions to improve this. With regard to our own Society, a fair number of Fellows and Associates who reside in our area are members of the Society, but the percentage of Licentiates is not so good. The figures are as follows:—25 members, 5 not; Associates 35 members, 10 not; Licentiates 18 members, 62 not. Leeds, I think, is well situated as a centre for the majority of the towns represented. If it is proposed to create additional allied societies I would suggest that Yorkshire should follow the Ridings, which would then be as follows, viz.: York and North Riding, Hull and East Riding, Leeds and West Riding. To obtain more supervision and influence over the provinces it would seem necessary that all members of the Institute should become members of the allied societies. In the case of Fellows and Associates I do not think there would be any opposition, because the R.I.B.A. refund their subscriptions. With regard to the Licentiates, there may be opposition, unless the R.I.B.A. can see their way to refund the necessary subscriptions, which I think they most certainly should do. There is a feeling abroad, I know, that many of the provincial members obtain very little benefit from their membership of the Institute, and I think something might be done to allay this feeling, say, by conferring certain grants to the allied societies.

Now let us look at the general condition of things in the twentieth century. The age of despots is past. Englishmen are never in the future likely to live under any more grinding tyranny than the caucus. Workmen are no longer slaves, even though they care quite as little or less about their work. The days when the prelates of powerful Churches, or the despots of petty kingdoms, could employ the untold labour of their serfs in carrying out the architect's dreams have gone for ever.

As Mr. Ruskin has said, "For us there can be no more the throne of marble, for us no more the vault of gold; but for us there is the loftier and lovelier privilege of bringing the power and charm of art within the reach of the humble and poor; and, as the magnificence of the past ages failed by its narrowness and its pride, ours may prevail and continue by its universality and its lowliness." Some few are called upon to do great things like the Cathedral at Liverpool or the County Offices, London. But, as a rule, we must be content to do simple things, and to do those simple

things as well as in us lies. Buildings of unlimited cost are now out of the question. Everyone who wishes to build, wishes to build with due economy; be it our aim to help him to build art also. The time of the workman now means, to put it in one word, money. We have to provide buildings simple and good. And the importance to the architect who should succeed of knowing precisely how and when to place rightly every shilling of expenditure on his building, whether of mouldings or ornament, sculpture or painting, has increased of late a hundredfold. Unlike the painter who places his creations at once upon the canvas or the sculptor who petrifies his ideas direct into marble, the architect has to produce his idea direct on paper and then to influence his materials by the hands of others. We cannot send houses and churches to the Royal Academy, and the architectural room there would be a more direct exhibition of architecture if it consisted of photographs of executed buildings. Drawings of some of the best architectural works are sometimes rejected, because not drawn as coloured pictures. I am glad that the Royal Institute has at last taken photographs into consideration for the elections to the Fellowship, because, to my mind, there is no better way of illustrating executed work. The great historical knowledge of architecture arising from the increase in the number of books and photographs has given rise to more and more downright copyism, some clumsy adaptation, and a serious amount of architectural muddle in buildings. Rightly used, books and photographs ought to produce a greater consensus of knowledge, and should enable men to think more freshly and design more freely.

Mere "eclectic" building, however clever, only renders more conspicuous the absence of design and creative power. If you wish to produce, and intend to produce, good art you must endeavour to understand first of all that you will never get paid for it. The pleasure you have had in it must be to yourself all the reward you will receive. You will, of course, be paid your percentage calculated on the sum which the builder has received for his part of the work, but you will receive this all the same if you work with the mind of the tee-square and compasses, and not in the spirit of the artist. The art in your work depends wholly on the pleasure you have taken in it, and has no market value.

Creative art can never be produced by rules, however necessary. We cannot always be repeating the wisdom of the ancients. Times change. New wants of time arise. The artistic perception in relation thereto grows clearer. There is no rule without an exception, and he who has passed into the inner sanctuary behind architectural rules and canons may sometimes break them with advantage.

The future will tell whether the present has its architects able truly to write history on the wall. The palmy days of Greece contrasted the perfect beauty of the temple in its noblest architecture with the hovel of the present in its lowest squalor.

In this England of ours to-day power is passing from the noblesse to the masses. Art, if any is to be left at all, must belong to the people, powerfully influencing by its universality their homes and lives. The mission of the architect is no longer to give expression to extravagance, but rather to educate by the truthful, intentional houses of the poor, and to all honest, substantial art with simple wants. He who most truly reads this is most in harmony with the spirit of the age. He who succeeds best without affectation in producing simple artistic work fit for the domestic life of England does most to discredit the modern shame and silly pretty trumpery which beats us on all sides and best paves the way for a new era in English architecture.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Open Letter to the Royal Institute of British Architects.

GENTLEMEN,—I earnestly appeal to you to use all your influence to bring to an end the evil custom of publishing the names of assessors in architectural competitions before the designs are sent in to be judged. The practical outcome of publishing the names beforehand has been to prevent many from competing who have felt unable to sympathise with the taste and ideals of the assessor. But the greatest evil of all is that men are induced to design up or down to

the assessor's level. Not setting out to do what they honestly feel to be the very best they are capable of, but for the sake of the reward, to prostitute their powers by endeavouring to appeal to the taste of the assessor. Let no competitor know who is to be his judge, and you at once remove a powerful inducement to unfaithfulness. It is a fearful tyranny that imposes any style on a designer. Conditions and requirements and moral law are enough data from which to produce the noblest architecture if properly attended to, assuming, of course, some degree of native refined sensibility. But when any style is imposed upon the designer the conditions and requirements that ought to control him are made subservient to the style. The plan has to be squeezed like a Chinese foot, and the honest expression of needs is sacrificed to the conventional commonplace of symmetry. The supposed leaders in the profession by this system can impose upon the British public the deadly dull imitations of the style they affect. Hence we have seen public buildings arise one after the other with the same trail of the serpent over them all. No healthy national style can be artificially grown in this way.—Yours faithfully, C. F. A. VOYSEY.

23 York Place, Portman Square, W.:

November 26, 1912.

Fire Protection in London and the London County Council.

SIR,—The coroner in summing up at the Kensington fire inquest on Thursday, November 21, is reported to have spoken as follows:—

"The calamity made one wonder how many other buildings in London were in the same condition as they were told Messrs. Barkers' premises were; how many negotiations were going on, and how many buildings were waiting before the necessary alterations were to be made."

I wish to take the earliest opportunity of publicly replying to these questions. There are upwards of 50,000 buildings in the metropolis at the present moment to which the London Building Act Amendment Act of 1905 has not yet been applied.

Although this Amendment Act has been in force now for upwards of seven years, the superintending architect of the London County Council, giving evidence before the House of Commons Committee on the London County Council General Powers Bill (1912) in June last, stated that only 2,330 buildings had been scheduled for action at that date, and that the Building Act Committee of the London County Council had only considered 1,203 of those cases. Of these 1,203 cases only 527 had at that date been satisfactorily equipped by the provision of suitable means of escape, and the balance were in what might be termed a state of negotiation.

That so few buildings (527) should have been put in order out of approximately 50,000 cases in the long period of seven years is a matter of gravest import, but the balance should not in any way be attributed to the superintending architect or his officers, but specifically to the London County Council in its corporate capacity, which does not give its Building Act Department either the necessary means, the necessary staff, or the necessary encouragement to carry out the requirements of the Building Act Amendment Act energetically and promptly.

It is not for me to go into the reason why the County Council should apparently have been so adverse to allowing its officers to carry out their obvious duties, but the fact remains that indirectly the responsibility for lives lost in such buildings as the Barker establishment must fall on the shoulders of the authorities rather than the building-owners, who, owing to the Council's known apathy, practically consider the Amendment Act of 1905 a dead-letter.

Thus the short reply to the coroner's question is that quite an enormous number of buildings in the metropolis are in the same condition as the one which was under review at the inquest—that but very few negotiations are going on as to remedying this state of affairs, and that quite 50,000 buildings are waiting for the necessary alterations to be made.

It is to be hoped that the Barker fire will awaken the London County Council to its duties in this particular matter. With the necessary staff and facilities, and with the diligence which the County Council occasionally applies to other departments of its work, the outstanding 50,000 buildings should be put in proper order within the next five years.—I am, Sir, yours very truly,

EDWIN O. SACHS.

British Fire Prevention Committee's Offices,

8 Waterloo Place, Pall Mall, S.W.:

November 25, 1912.

The Architect.

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FORTHCOMING EVENTS.

Monday, December 9.

Architectural Association : Joint Meeting with the Art Workers' Guild, at 8 p.m.

Tuesday, December 10.

Royal Academy of Arts : Distribution of Prizes to the Students, at 9 p.m.

Wednesday, December 11.

Edinburgh Architectural Association : Associate's Paper entitled "Scale of Ornaments in Architecture," by Mr. Joseph Hayes, sculptor, at 8 p.m.

Northern Architectural Association : Paper entitled "Small Country Houses of To-day," by Mr. L. Weaver, F.S.A. Hon. A.R.I.B.A., at 7.30 p.m.

Thursday, December 12.

Society of Architects : Paper entitled "Salisbury Cathedral," by Mr. E. W. Harvey Piper, at 8 p.m.

Leeds and Yorkshire Architectural Society : Brief Description of a Tour in Italy and exhibition of Drawings, by Mr. G. H. Forgett and Mr. Piet de Jong, at 6.50 p.m.

Sheffield Society of Architects : Paper entitled "Barnack Church, with Parallels from neighbouring Churches," by Mr. H. F. Traylen, A.R.I.B.A., at 7.30 p.m.

SCOTTISH ARCHITECTURE.

On the whole it would probably be correct to say that architecture in Scotland, of whatever period we like to select, does not differ from architecture in England more than local variations differ from each other, and that Scottish architecture should rather be regarded as a section of British architecture than a distinct development.

This does not preclude the existence of distinctive methods of treatment and evidence of originality and independence of thought. If we take as an example the work in Glasgow Cathedral we find an excellent specimen of Early English work which, in the hands of the same individual designer, might have come into being in Hampshire or the Isle of Wight, and a student of Early English work of the thirteenth century would not have been wrongly directed if he had been advised to make careful studies and measured drawings of the crypt of this Cathedral, which, in the words of Professor Simpson, "has no equal in England, probably none in Europe."

The four principal abbey churches of the Lowlands—Kelso, Jedburgh, Dryburgh, and Melrose—are also equally worthy of study and will not lead the student astray from the normal treatment of mediæval architecture in the British Isles, and, indeed, their ruined condition affords a better opportunity for the study of the inwardness of mediæval construction than does that of better preserved buildings.

It is true that in Melrose, the latest in date of these abbeys, there is some suggestion of French influence, as in the inclusion of chapels in the south aisle of the nave and in the tracery of some of the windows, but French influence in the fourteenth and fifteenth centuries is not confined to Scotland; it is repeatedly shown in English work, evident in the most unexpected places and without any apparent reason, at least as far as our knowledge of local circumstances in the past extends in the present day.

There can be no doubt, however, that a close intercourse between France and Scotland in the later mediæval and early Renaissance period was responsible for what it is the fashion to call Scottish Baronial Architecture. The circular tourelles, whether corbelled out or starting from the ground, undoubtedly had their prototype in the mediæval châteaux of France, and it is sometimes alleged that the corbie-step gables also had a Continental origin, but this theory we are not prepared to accept without a certain amount of reserve. The feature is at any rate a logical and easily worked method for the construction of the finished line of a gable, and it may well be that practical common sense dictated the use of the form in Scotland rather than a desire to imitate the work of Continental contemporaries.

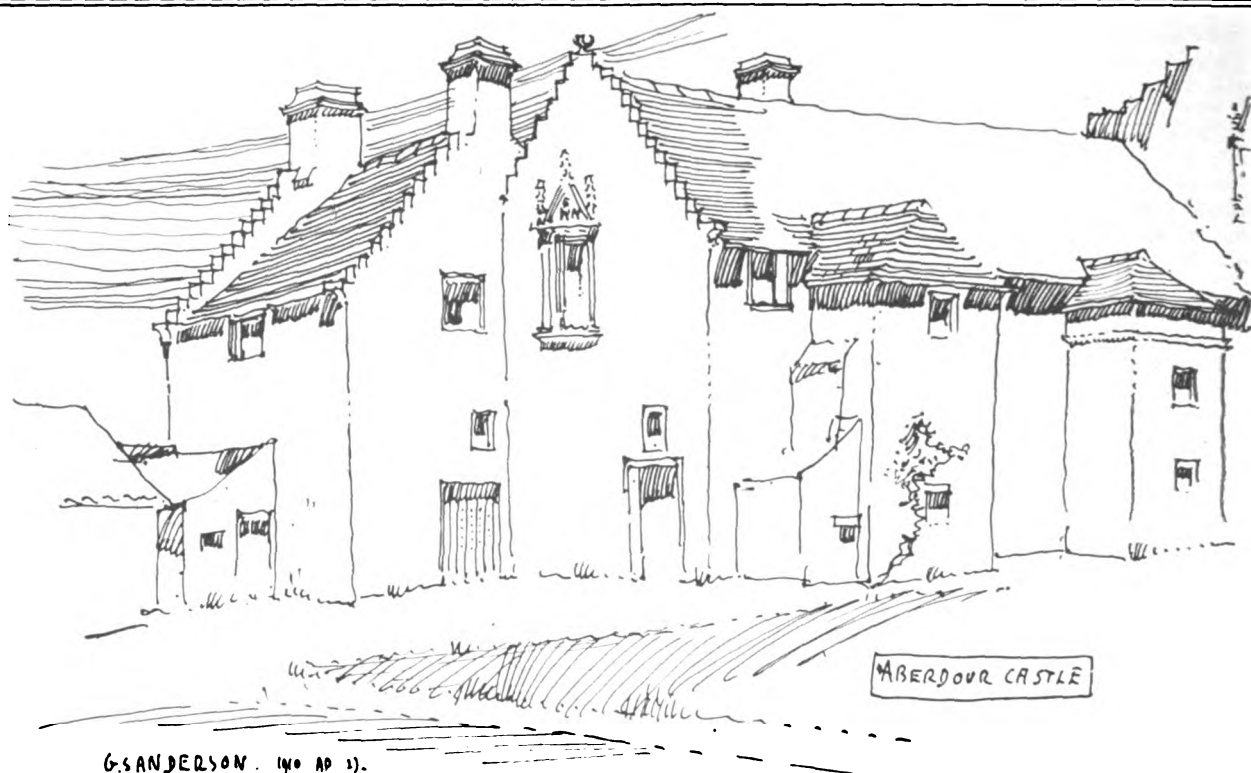
We must not leave the consideration of the late mediæval period in Scotland without reference to the work at Roslyn with its parallelism to Portuguese work at Belem and Batalha, both interesting manifestations of what would probably have been the lines of development of Gothic architecture generally throughout Western Europe if it had not been overwhelmed by the flood of the Renaissance.

It is worthy of note that the early Renaissance detail of Scotland has a distinct individuality of its own. It cannot be said to have been adopted straight away from any Continental source, although it is true there is a certain amount of affinity between its results and those which are to be found in the Low Countries. This, however, we are inclined to attribute to the similarity arising from the individual working out of similar problems under similar conditions and similar influences by craftsmen working on parallel lines, rather than affected by any derivative connection. Thus, for example, Heriot's Hospital in Edinburgh, though possessing many ideas in common both with English Jacobean work and contemporary buildings in the Netherlands, has sufficient individuality to show that its designers were struggling through a period of transition from the same standpoint of Gothic tradition towards an as yet imperfectly understood ideal of Classic example.

The window head ornaments with their quasi blind tracery treatment on the principle of strap work both here and in the Regent Murray's house in the Canongate, show considerable fertility of design and an application of economy in building to the realisation of a pleasing effect at small cost. Not yet, however, has the sturdiness of the mediæval design given place to the refinement of the completely developed Renaissance.

When we come to a consideration of later work we find that the architects of Scotland more truly understood and were more completely imbued with the quality of refinement in Classic work, and we cannot forget that some of the best work of the Brothers Adam is to be found in the Assembly Rooms at Glasgow and in the College at Edinburgh. These cities also furnish us with some of our best British examples of the art of the Greek revival as exemplified in the Royal Institution and the High School at Edinburgh.

The thoroughness with which Scottish architects assimilated the best qualities of Classic design during the revival period seems to have influenced the work of their successors down to the present time, and there is in no part of Great Britain better architecture than that which has been produced during the last quarter of a century in the architects' offices of Glasgow and Edinburgh.



NOTES AND COMMENTS.

THE somewhat narrow line between legitimate and illegitimate commissions in the complicated system of modern commercial methods tends to the development of skilful evasion of the efforts of the Prevention of Corruption Act to put down secret commissions and bribery, and we are interested to know that the Secret Commission and Bribery Prevention League, Incorporated, now issues a "news-sheet," a special number of which has reached us containing counsel's opinion upon the legality or otherwise of various customs which occur in commercial transactions. Some of these concern architects. Thus we are told that counsel does not think that a builder employed as a tradesman to fix articles ordered direct by a customer from a manufacturing or other firm is an "agent" within the meaning of the Act, or, by receiving a commission from such manufacturing or other firm, is contravening any of its provisions.

In an address to the members of the Birmingham Architectural Association Mr. Raymond Unwin spoke of town planning from an architect's point of view. He gave several reasons why architects should take an interest in the town planning question. In the first place, he thought that it affected their buildings; in the second, it was really architectural work on a large scale; and in the third they, as a profession, stood specially for the addition of beauty to useful building. When it came to actually making a plan for the laying out of buildings the matter got beyond what either the engineer or the surveyor was trained to do. The function of the surveyor was to bring before the town planner the whole of the facts of the site as it existed, the whole of its conditions, and the whole of the requirements as to the future; and it was his business when the architect had made plans which, architecturally, satisfied those requirements, to criticise them from the useful point of view. The engineer was the structural and executive man; he must tell them the limitations within which they must work. But when it came to making the actual plan the problem became an architectural one, and it was then that the architect should claim his fair share of the work. Town planning consisted of two things. It was not only a plan, but a scheme. It fixed the width of streets and building lines, and the height of buildings in relation to streets. In some it was laid down that no houses should be of more than two storeys, and one partly, or wholly, in the roof. Here the interests of the architect were

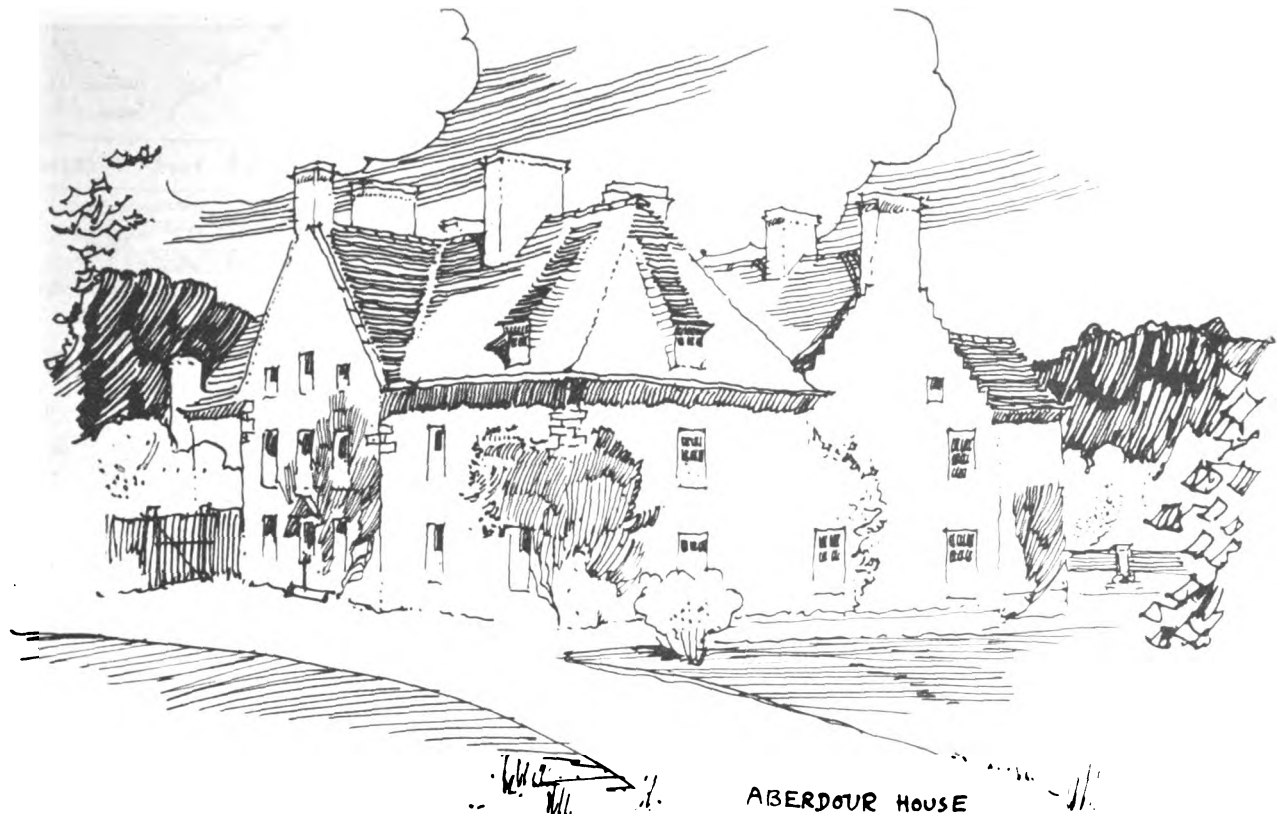
concerned. Then, again, some schemes gave to the local authorities power to approve of the laying out of groups of streets. Here, too, the interests of the architect were concerned. A limit to a certain number of houses in a row had been suggested in some schemes, without regard to whether there should be a wish to build a group of houses or not at the same time. The area of the site which might be covered by buildings was limited, and if this point were not watched it might easily happen they could never have a street corner built up with any sense of closing in, and there would be great gaps even larger than those allowed under present by-laws.

From the annual report of the Royal Technical College, Glasgow, we learn that the instruction in architecture and building is appreciated by a large number of students, 640 having attended during 33,573 hours. The association of the Architecture and Building Department and certain others in the College with the Glasgow School of Art in the maintenance of the Glasgow School of Architecture continues to be successful, whilst the Architectural Craftsmen's Society has a membership of 121, who have listened to interesting and useful lectures on various subjects connected with architecture, including "The Application of Practical Geometry to Full-size Work in Scientific Stone-cutting and Masonry," "The Microscopical Examination of Architectural Materials," "The College Diploma and Certificate Courses in Building," and "Rothenburg on the Tauber."

Amongst the honours gained by architectural students of the school were the Soane Medallion and a certificate of honourable mention in the same competition, together with another certificate in that for the Pugin Studentship, whilst two of the students passed the final examination of the R.I.B.A., and two the intermediate examination.

The autumn number of *The Vista*, the quarterly magazine of the Glasgow School of Architecture Club, contains an interesting paper by the Rev. Professor Cooper on "The Fine and Applied Arts as Handmaids to the Church's Worship," in which many true lessons are inculcated as to the right use of the arts in church buildings.

A collection of articles from the pages of the *Croydon Guardian* by Mr. Lindlay Latham makes an interesting little book, with a record and instructive description of the special features of the various churches that it describes. We should like to see the example thus set



GORDON SANDERSON

40. 25. 10

ABERDOUR HOUSE

NOTE. DORMER WINDOWS.

followed by the local press throughout the country. Such articles as are here included should do a good work in interesting the general public in the historic monuments and ancient art of their particular neighbourhood, and thus tend to abolish the greatest enemy of architecture in this country—the ignorance and apathy of the Philistine.

PETROL AIR GAS.

SINCE the series of articles on Petrol Air Gas by Professor C. A. M. Smith appeared in the pages of *The Architect*, manufacturers of petrol-lighting plants have not been standing still, and we have from time to time called attention to new forms of apparatus, which have mostly pursued as their line of development the simplification of the working of the machine.

Petrol air gas has peculiar advantages of its own which are by now well recognised, and affect especially its position as a satisfactory method of lighting detached country houses which have to depend upon their own resources and cannot draw a supply of gas or electricity from some central station. It is essential, therefore, that any petrol lighting plant shall be of such simplicity that it does not require an individual of trained engineering skill to manage it, and the nearer any plant approaches to a fool-proof machine, capable of being worked by the ordinary maidservant, the better will be its chance of satisfying the requirements of a large number of householders.

Amongst the simply designed machines which have lately been placed upon the market is the Mitchelite, which in the normal type is actuated by water pressure, but can be arranged to be weight-driven. The plant consists of: (a) a gas drum fitted with a bell, which is connected with a vertical cylinder or pump; (b) a gas storage chamber whence the gas passes through the pipes to the burners; (c) a petrol supply tank connected by a tube with (d) the vaporiser or carburettor. The water supply automatically drives a patent pump, which forces down the gas drum and at the same time measures out the correct proportion of petrol, and, rising again, distributes it to the vaporiser, simultaneously drawing in a proportionate quantity of air to mix with it, thus forming

the gas vapour. By the fall of the gas drum this vapour is forced through the pipes into the gas holder.

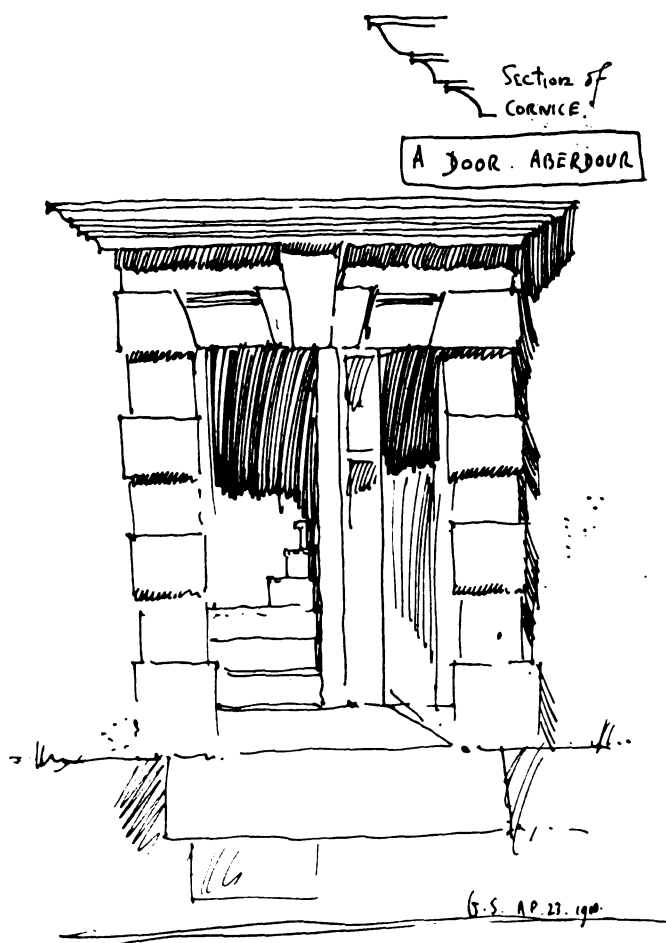
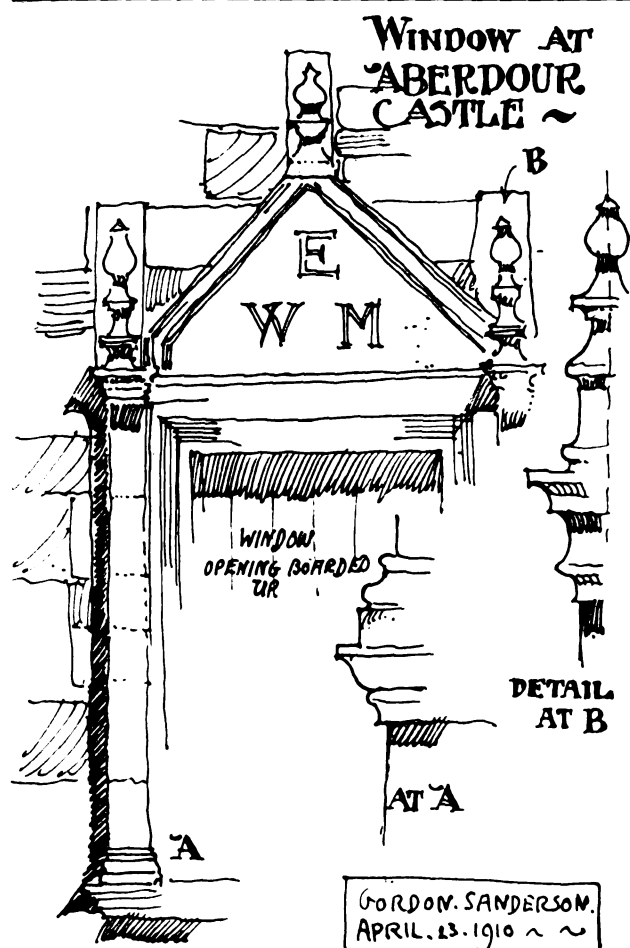
In the vaporiser or carburettor the method adopted is that of allowing the petrol to trickle over a series of trays, thus becoming vaporised and mixing with the air.

It will be understood that when once the water supply is turned on the machine is automatic and requires no attention, the amount of supply of gas being always dependent on the consumption. The lights are remarkably steady and give warning when a further supply of petrol is required by a decrease of brilliancy, so that there is ample time for refilling the petrol tank before the light goes out entirely. The apparatus generally gives the impression of being a sound engineering job, and not a collection of tin cans.

SKETCHES IN ABERDOUR, FIFESHIRE.

ABOUT half an hour in the train from Edinburgh this little town is well worth a visit and full of interest to the architect. Like many other towns which possess a castle or some other large edifice of architectural merit, the inhabitants have been influenced in their building by it, and led to give their buildings little touches of detail which go far to make them of great architectural value and interest.

The castle, which first claims attention, consists of a keep of considerable antiquity. It is of rubble with dressed quoins and jambs, while the later Jacobean additions are of dressed stone, and the combination of the two styles is most pleasing. A garden terrace runs across the south front. Queen Mary's seat on a lawn below the terrace gives a touch of romance to the composition. The pigeon-house is said to be of the same date as the keep. Unfortunately the castle is now unoccupied and weather is playing sad havoc with the building, which is undoubtedly one of Scotland's finest architectural relics. The terrace, of which a small sketch is given, is a charming feature of the place. Below it is the bowling alley and archery ground, and at a still lower level is the old tilting ground. The ground falls away from the terrace towards the sea, and the pigeon-house is a pleasing feature in the foreground. The view from the castle across the Firth of Forth to Edinburgh is a magnificent one. The local guide-book describes the situation of the castle thus: "Still under the glamour of Scottish legend and romance, the visitor as he retraces his steps from the rocky promontory carpeted with soft verdure up to the limit of the hissing foam, is summoned to a historical reflection by a vision of



the Castle of Aberdour, overlooking the Dour and commanding a far-reaching view of the Forth and the fair lands beyond." From this the reader may judge that the site of the castle is no ordinary one. There are numerous interesting pieces of detail to this building, the window heads and sun-dial being especially noteworthy. It is unfortunate that the castle should have fallen into decay, but "evil happens that good may come," and its ruinous state led to the building of Aberdour House in the seventeenth century, which is a fine type of Scotch manor house. The old church which stands near the castle should also receive a visit. It dates back to the twelfth century. Still further east are the remains of an old barn where the country people were wont to bring in their tithes to the monks who would come over from Inchcolm.

Inchcolm is a small island about $1\frac{1}{2}$ miles from Aberdour, on which there are extensive monastic ruins. The island has seen troublous times, having been used as a state prison, lazaretto and garrison, but at present is undisturbed save by the tourist and archaeologist. A fresh-water well provides the water supply, and this well is, curiously enough, only a few yards from the sea. A stone over the door of the church bears the inscription,

"Stet domus haec donec fluctus formica marinos
Ebibat et totum testudo perambulet orbem."

May it prove true! There are many interesting little pieces of architecture to be seen in the town. The doors and chimneys are especially noteworthy. A pigeon-house is illustrated. These pigeon-houses are quite unique and form pleasing adjuncts to Scottish farmsteads. Donibristle House, open on Thursdays only, should also be visited. The garden is a fine one, and there is also some fine iron work in the gates presented by William III. to Lady Argyll. The House saw a horrible tragedy in the murder of Earl Moray. The latter incurred the displeasure of King James, as

"The bonnie Earl of Murray,
Oh! he was the queen's luvie."

The king engaged Huntly, a personal enemy of Moray's, to arrest him and the latter murdered Moray and burnt Donibristle. The house has been burnt in all three times. The present tenant of Aberdour House and the Castle courteously gave the writer much facility in inspecting the Castle. To one unaware of the charming individuality of

Scotch architecture, Aberdour is full of interest and should be certainly visited by anyone who wishes to study Scotch Domestic architecture. It was only the writer's privilege to spend a day there, but a week's stay would result in the filling of a sketch book full of most useful notes.

TEST DEFLECTIONS IN REINFORCED CONCRETE.*

THE above subject not only calls for the closer attention of engineers, but needs that closer attention without delay, before the proposed L.C.C. Regulations fix a standard of deflection which may or may not be correct, or even safe.

The Relation of Stiffness to Strength.—There is no need for the author to mention that the stiffness of a beam is no criterion of its strength, unless due regard be paid to the factors of depth and fibre stiffness; but it is not too easy always to appreciate that the fibres of a short deep girder, deflecting under load to say $\frac{1}{2}$ inch, are possibly being punished much more severely than those of a long shallow girder deflecting say 3 inches. Still more difficult is it to avoid the drawing of incorrect assumptions from the very minute deflections of reinforced concrete beams, because in their case not only are the formulæ for strength very tedious, but the writers of text books have failed to establish any connection between them and deflection, or even to show how deflection can be calculated.

Small Deflections in Reinforced Concrete not a Proof of Strength.—When beams of reinforced concrete are tested to say one and a-half times their working load, extremely small deflections are recorded, which are triumphantly quoted as evidence of the enormous strength of the new material, because a steel beam of the same proportions would have deflected very much more under its ordinary working load.

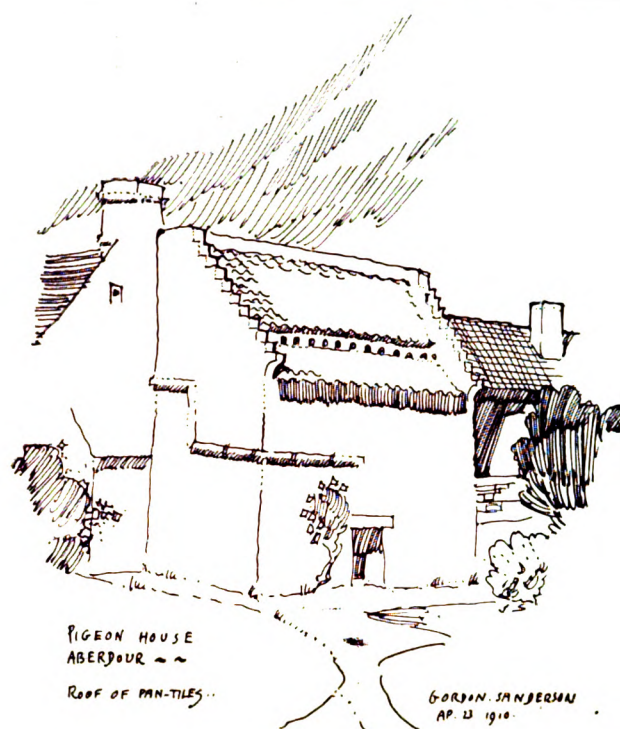
A point which is seldom mentioned, however, is that the deflections are small because the greatest working loads and stresses which we dare to place on reinforced concrete are so very much less than those which we habitually work to in wood or steel.

Reinforced Concrete Weaker than Steel or Fir.—A deflection of say $\frac{1}{2}$ inch in an ordinary wood or steel floor beam

* Abstract of a Paper by Mr. Percy J. Waldram, F.S.I., M.C.I., read on Monday, December 2, before the Society of Engineers (Incorporated).



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PIGEON HOUSE
ABERDOUR

ROOF OF PAN-TILES

GORDON SANBURN
AP. 11 1910

under a test load might indicate quite a satisfactory factor of safety. The same deflection in a reinforced concrete beam of the same proportions would mean that the structure was on the verge of total collapse.

Reinforced concrete has so many advantages over wood and steel in its great durability, its adaptability, and its simple and monolithic character that there should be no need for its exponents to claim for it the strength of steel or even that of ordinary fir. It is a much weaker material than either, and to pretend or believe otherwise is to court disaster. The safe load on a fir beam can always be trusted to destroy a reinforced concrete beam of the same size, unless the latter is heavily reinforced in compression.

It does not require much detailed investigation to appreciate that the fibre stress of 600 lb. per square inch, which is the limit of good concrete in compression in beams, obviously cannot produce deformations comparable with those which result from 11 or 12 cwt. per square inch on timber (quite a light loading) or $7\frac{1}{2}$ tons per square inch on steel.

Of course, concrete beams can be reinforced in compression, but the strength of the concrete surrounding the compressive reinforcement is still the governing factor, and double reinforcement is very uneconomical.

Reinforced concrete has the advantage of being easily formed with fixed ends, encased edges, and into ribbed floors in which the transverse slabs assist the main beams, and the strength of each part contributes to that of one strong monolithic whole; but even with those advantages the proportions of the parts have to be more generous than would be necessary with wood or steel, and the deflections under test loadings are necessarily far less than we have been accustomed to in those materials.

Deflections of Beams under a Given Stress.—It should be carefully remembered that we can obtain the deflection of a beam of given depth, span, and material under a given system of loading, without troubling about its moment of inertia or its section modulus, or even the amount of the load, provided that we know that the loading is stressing the fibres to a given amount.

Conversely, in all beams having the same proportion of depth to span, any given proportion of deflection to span under the same system of loading must indicate the same fibre stress in material of the same stiffness, whatever may be the size of the beam, the span, or the load.

Reinforced concrete therefore must always be expected to show deflections far less than those to which we are accustomed. Long before it deflects to anything like the extent that wood or steel does, it would be time for those conducting the test to look to their own safety.

The L.C.C. Draft Regulations.—The draft regulations of the London County Council specify certain degrees of deflection which would appear to need careful consideration. It

is necessary not to lose sight of the fact that these regulations require the approval of the Local Government Board before they can come into force; and that until they are so approved it is the obvious duty of professional men to endeavour by all available means to bring them to a high state of efficiency. Their scope may be nominally limited to special buildings in London alone, but when once adopted they will most certainly be regarded as a standard, and their conditions will be specified in cases where they have no legal status whatever.

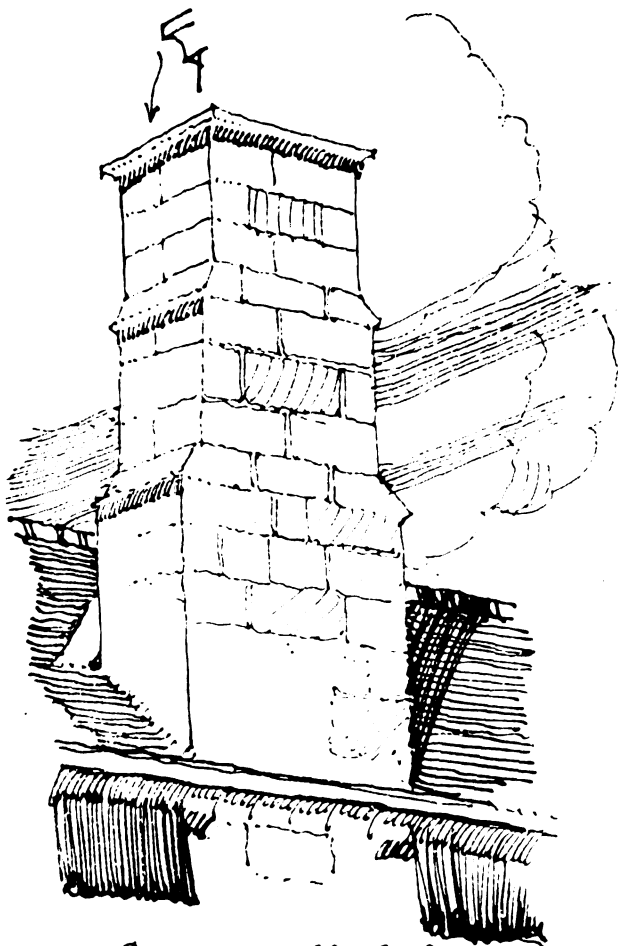
The Act of 1909 which authorises their compilation requires the Council, before applying for their approval by the Local Government Board, to give notice to the Surveyors' Institution, the Institution of Civil Engineers, the Royal Institute of British Architects, and the Concrete Institute. Every member of any of these Institutes can therefore approach his Council or the Local Government Board direct, if it should appear to him to be desirable that any of the 160 clauses should be altered.

The Regulations in their present form appear to have been carefully compiled from codes already in existence in Europe and America, where reinforced concrete is far more extensively used than in England. At least one of these codes—that of the French Government—was based upon six years of valuable and exhaustive experimental research. It would therefore scarcely be expected that any serious errors of principle would have been generally adopted, and clauses upon which the foreign codes are unanimous, or are in general agreement, ought apparently to be good enough to adopt.

But precisely the same considerations obtained when other codes were drawn up. The natural desire of the codifying authority to be able to show precedents for its Regulations is only too favourable to the perpetuation of errors, which acquire fresh status every time they appear. It would therefore certainly seem to be desirable that the Institutions should do all they can to awaken interest in these Regulations and secure the greatest possible volume of criticism from their members; so that even if errors of principle may have crept into other codes, they shall not be repeated in the first British code.

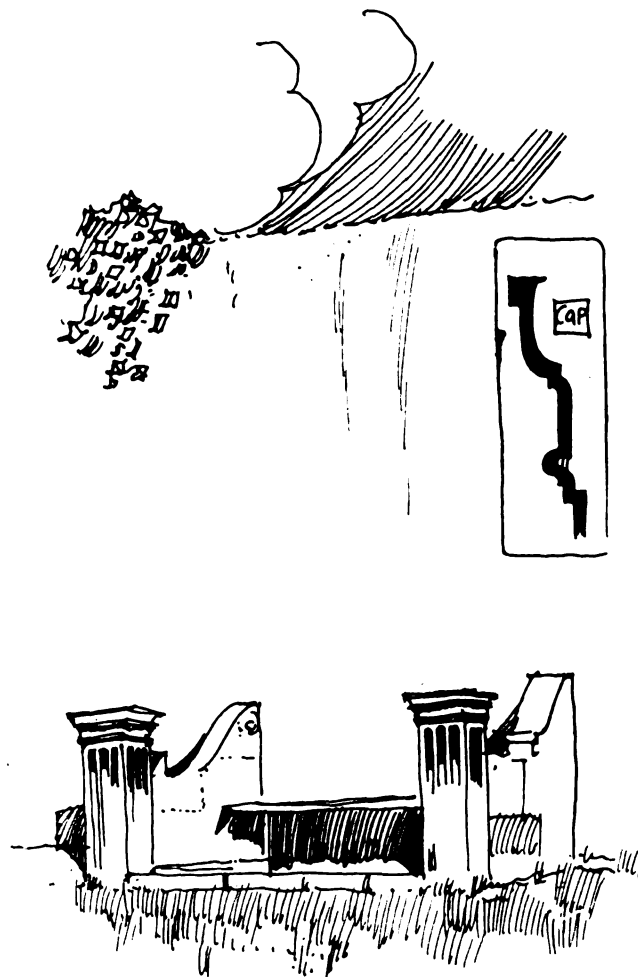
Early in the present year the author was consulted with reference to a case where the parties had agreed that the Regulations as printed in the Council's Minutes should be worked to. This opportunity of applying them to the problems of a somewhat complicated design necessitated a close examination of their provisions, and the result was, to say the least, disquieting.

For instance, the clauses determining the strength of columns—based like the French Code and the R.I.B.A. Report, on a mis-applied reading of Euler's formula—were unworkable; whilst those relating to deflection would appear to be positively dangerous.



CHIMNEY AT ABERDUR
CASTLE

GORDON SANDERSON



"QUEEN MARY'S SEAT"
ABERDUR CASTLE

G. SANDERSON.
AP. 23. 1910.

Clause 23 allowed beams of a lesser depth than $\frac{1}{2}$ span, provided the calculated deflection was less than $\frac{1}{800}$ span—regardless of the fact that even with absolutely free ends the concrete of a beam $\frac{1}{2}$ of the span in depth deflecting $\frac{1}{800}$ l would be stressed to nearly 700 lb. per square inch, whilst in beams with fixed ends it meant anything up to 3330 lb. per square inch. As the clause did not specify whether test or working load was to be calculated for it might have been merely harmlessly unworkable, especially as there was no method specified for calculating the deflection of T and double reinforced beams.

But Clause 143 specified the test by means of which the District Surveyor should determine whether or not suspected work should be condemned as being a deflection of $\frac{1}{800}$ of the span under the full working load. A short deep beam with fixed ends or a thick square slab with four fixed edges was thus to show precisely the same degree of flexibility as a long shallow beam with absolutely free ends.

Of course this was no test at all. No beam or floor of ordinary proportions could ever show such a degree of deflection, it would simply cease to exist. A beam of only $\frac{1}{2}$ of its span in depth, even with absolutely free ends, whatever its section, is necessarily being deformed when the deflection reaches $\frac{1}{800}$ of the span, to an extent which can only be consistent with a stress of 1,066 lb. per square inch on the concrete.

No amount of compressive reinforcement can make any difference, because when that degree of deflection is reached the concrete surrounding the compression rods is receiving a stress under which it is liable to spall off and leave the rods denuded and free to buckle. If the beam were deeper or if the ends were fixed, as they are in the great majority of cases, the specified degree of deflection would be still more impossible.

But no beam, however bad or shaky, could be condemned under the clause so long as it showed under test load any less deflection. The clause not only gave an implied official approval of a test deflection which would be highly dangerous to everybody concerned, but it would have effectually defeated its own object by preventing the condemnation of

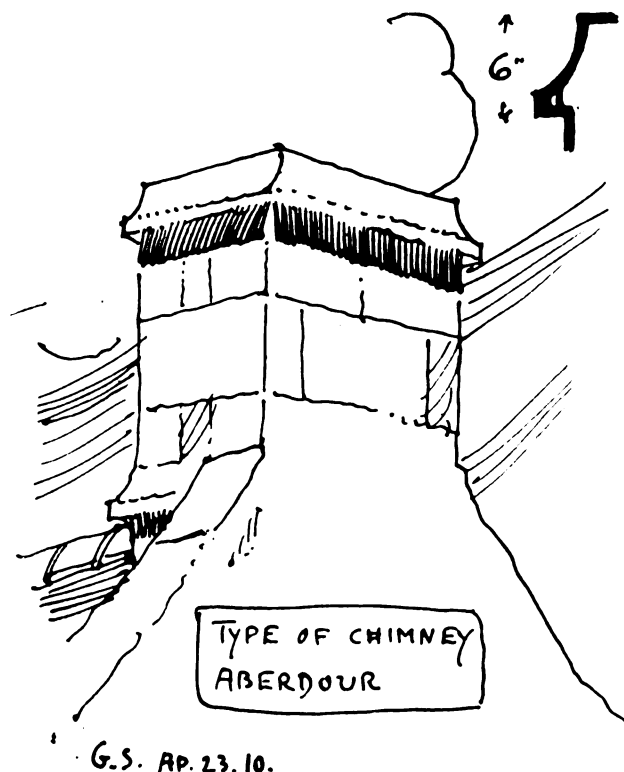
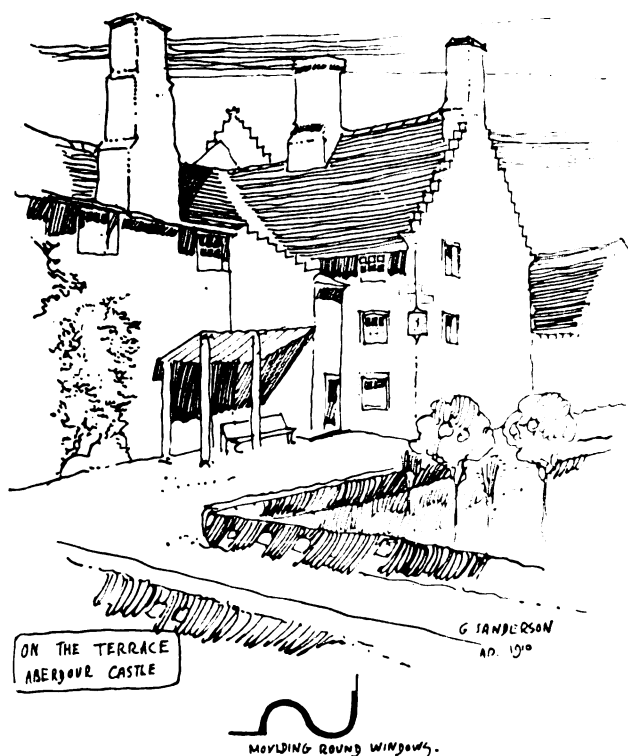
any beam or floor which could just stand its calculated load without any factor of safety.

These and other points were submitted to the Council of the Surveyors' Institution, who promptly met and considered them, and made representations which at the time of writing are presumably still under consideration.

Suggested Standard of Deflection under Test Load.—The author's suggestion made with regard to deflection was that the standard should be $\frac{1}{800}$ l on a beam $\frac{1}{2}$ of the span in depth under the calculated load, with free ends and distributed loading; the effect of any conditions other than these being duly allowed for in each case. This would apparently have been equivalent to about 480 lb. per square inch on the concrete. Of course, any test which increases only the superimposed load varies in severity, being lenient on heavy beams and severe on light ones; a 25 per cent. increase on the total calculated load may or may not be equivalent to a 50 per cent. increase on the superimposed load, but it is estimated to do so in the average case.

Effect of Ordinary End Fixing not yet fully Determined.—It would obviously be better to have a standard criterion of deflection applicable direct to the fixed ends customary in reinforced concrete beams. But whereas we can predetermine the deflection of reinforced concrete beams with free ends and compare it with actual tests, experimental data are lacking as to the actual effect of the ordinary methods of fixing the ends of such beams; which are, it must be remembered, almost invariably doubly reinforced at the ends to meet the reverse bending moments over the supports, and are therefore of unequal stiffness. The theoretical effect of complete end fixing in a beam of uniform section is to reduce the deflection to $\frac{1}{2}$; but to stipulate for a deflection of $\frac{1}{800}$ l with fixed ends might be right or it might be wrong. We do not know.

Experiments to determine the point would not be very expensive or difficult, and there is power under the parent Act for the London County Council to make them. But until the point is determined, at least approximately, it is obviously impossible to legislate on a basis about which we know practically nothing.



G.S. AD. 23. 10.

Importance of a Correct Standard.—If the standard of stiffness be fixed too high good work will be unjustly condemned; if it is too low, bad and dangerous work will receive an undeserved certificate of strength. The minute range of the deflections makes it all the more necessary to fix the standard with the greatest care.

The Calculation of Deflection under given Loading where the Stress Involved is Unknown.—The thankless field of active legislation can now be left for the less exciting but far more interesting study of engineering problems.

The fact that reinforced concrete has been smothered with a mass of intricate formulæ scarcely makes it inviting to the general practitioner. If we had to calculate the moment of inertia every time we used a rolled section we should leave mild steel to experts and go on building in masonry, cast iron, and wood. The formulæ for reinforced concrete continually reiterate properties which might just as well be obtained from tables or diagrams; we therefore leave the subject to experts, and stick to mild steel and the Tables of Properties of British Standard sections. The British engineer requires to be personally assured of the accuracy of his calculations—and when the R.I.B.A. Report tells him that the moment of resistance of a T beam is:—

$$cbd_d \cdot \frac{S^3 + 4 mrs^2 - 12 mrs + 12 mr}{6(S^2 + 2mr)}$$

he prefers to use a rolled joist.

As a matter of fact about half the terms in that formula are unnecessary, and the other half can be tabulated and plotted on diagrams; so that the designer picks out a T section from his diagrams just as easily as he can pick out a rolled joist.

Only when the subject of reinforced concrete is thus dug out of the overlying strata of mathematical symbols is it possible for the average engineer with limited time and less leisure to investigate its principles. Let us endeavour to excavate the subject of deflection.

The actual and exact measurement of the strains produced by carefully measured stresses is an operation full of interest and instruction to the engineer, and when the theoretical and actual deflections are plotted side by side their comparison is especially useful.

In beams of wood and steel it is a comparatively simple matter to predetermine and plot the deflection due to any given loading; but in reinforced concrete beams the unnecessary complexity of the standard calculations for strength has apparently scared investigators from attempting to deduce the moment of inertia of a section. As a matter of fact, when calculating the strength, all the necessary calculations to determine the moment of inertia are made, and when this is obtained the ordinary formula $\Delta = \frac{x W^n}{EI}$ can be applied

with the same facility with which it is used to ascertain the deflections of wood and steel beams.

In this standard formula, x is a constant varying with the type of beam and the method of loading, W is the total load in lb., l is the span in inches, E is the modulus of elasticity of the material in lb. per square inch, and I is the moment of inertia of the section in inch units.

Deduction of Moment of Inertia from Moment of Resistance.—The difficulty of applying this standard formula to reinforced concrete beams has been that the formulæ for moment of resistance do not use the moment of inertia. But the moment of inertia is simply the section modulus multiplied by the distance y of the neutral axis from the layer of fibres with regard to which the section modulus has been calculated.

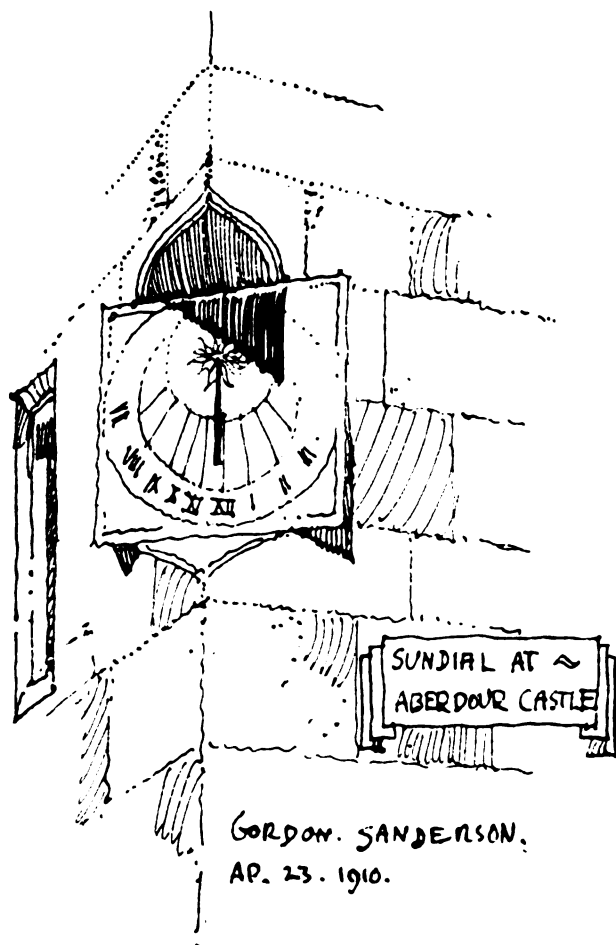
The section modulus for the outside skin of concrete is expressed by the formula which determines the moment of resistance of the section with regard to the concrete, with the term c denoting the stress on the concrete omitted. Similarly the section modulus for the tensile reinforcement is merely the formula which determines the moment of resistance of the section with regard to the steel, with the term t denoting the tensile stress omitted.

We can therefore obtain the moment of inertia either from the R_c or the R_t formula by omitting c or t and multiplying by the distance of the neutral axis from the fibres under consideration. This will be the well known dimension n in the one case and $d-n$ in the other.

Reference was then made to the calculations necessary to determine the strength of reinforced concrete beams, and a number of formulæ were given, with explanatory notes. The application of these to well-known tests was shown by a series of eight diagrams, and particular attention was directed to one in which the conditions were such as were generally supposed to make the calculations almost impossible, on account of their intricacy. By the author's method, however, the problem was shown to be very much facilitated.

In conclusion, the author said he trusted that in necessarily drawing attention to the want of intrinsic strength of individual members of reinforced concrete structures he will not be considered to be disparaging a material which for many purposes is the finest we have. No material can attain its full growth in an atmosphere of foggy mystery. Until engineers as a body can appreciate its principles and know its weak points as well as its advantages it will not be used with the confidence which it deserves.

THE Bishop of London, in a recent address, said:—“Because the streets are dull and monotonous, vulgar and glaring, we want nothing but the very best church in the East End.”



LONDON COUNTY COUNCIL AND PREVENTION OF FIRE RISK.

FOLLOWING upon the recent disastrous fire at the premises of Messrs. John Barker, Ltd., important questions were asked at this week's meeting of the London County Council, involving the steps taken by the Council under the Building Acts (Amendment) Act, 1905, to secure proper equipment of buildings in London against fire risks and the provision of adequate means of escape.

Mr. C. Jesson asked the Chairman of the Building Acts Committee whether his attention had been drawn to the letter in the *Times* over the signature of Mr. Edwin O. Sachs, making the serious and startling allegation that only 527 buildings had been put in order out of approximately 50,000 to which the Act applied, and who was responsible for producing the Council's plans of buildings as required by Section 7 of the Act?

In view of the jury's verdict at the inquest in connection with Messrs. Barker's fire, Mr. Jesson further asked what steps would be taken to secure that all such buildings should be brought up to the standard required by the Act; how many such buildings were not up to that standard, how many were receiving attention, and how many could be considered satisfactorily equipped by the provision of suitable means of escape?

Mr. Andrew Taylor (Chairman of the Committee) replied that the figure of 527 represented the number of twenty-person buildings coming under Section 9 only, in which the means of escape had been put in order. It took no cognisance of other sections, under which a great deal of work was being done. The figure of 50,000 quoted by Mr. Sachs was a pure guess. The total number of buildings which had been put right, to which the 1905 Act applied, was 8,299, and since January 1906 1,161 factories had also been completed as regards means of escape. The owner of new buildings was responsible for submitting drawings under Section 7 of the Act, and under no other section could plans be demanded. Reasonable steps were being taken to obtain satisfactory means of escape, and preference was given to those cases where it was known that employees slept on the premises. It was not known how many buildings were not up to the Council's standard in the matter of means of escape, and it was impossible to separate those in which assistants lived in from those in which they did not. Every little house with more than two families living in it came under Sections 10 and 12,

and there were many thousands of such houses all over London, but it would be a serious hardship to compel the owners to go to much expense. The Act had to be administered with discretion, and the Committee were doing that to the best of their ability.

Replying to a further question by Mr. Jesson, Mr. Taylor said the total number of buildings which had been inspected under the 1905 Act and the Factories Act was 12,543. It was impossible to say how long it would take to make an inspection of all buildings coming under the Act, because statistics were not available of the number of buildings to be inspected.

Mr. Jesson further asked the Chairman of the Establishment Committee how many assistants the Architect of the Council had to aid him in carrying out the Council's duties under the London Building Act, 1905, and whether it was not possible to increase the staff by engaging, if necessary, temporary assistants to expedite the working of the Act.

Mr. Isidore Salmon (Chairman of the Committee) replied that the number of the staff was seventy-three, but the question of augmenting the staff was a matter for the Building Act Committee.

COMPETITION NEWS.

GOVAN.—The plans submitted by Mr. Andrew Balfour, F.R.I.B.A., Glasgow, have been selected in the limited competition for a school proposed to be erected at Govanhill by the Govan Parish School Board. Accommodation is provided for 1,200 scholars, and the cost is estimated at £18 000.

HARROGATE.—The Competitions Committee of the Royal Institute of British Architects have been in correspondence with the promoters of the Harrogate School Competition. As a result of the correspondence, the conditions have been amended and are now regarded as satisfactory.

THE Devonport Borough Council have been recommended by a committee to make preliminary arrangements for inviting plans and designs by competition for a new Guildhall and municipal offices at a cost not exceeding £70 000. A site near the Technical Schools has been acquired for the purpose.

ILLUSTRATIONS.

ST. ANNE'S CHURCH, CORSTORPHINE, EDINBURGH.— TYMPANUM.

THE new church which is being built at St. John's Road, Corstorphine, will be enriched with a sculptured tympanum surrounded by a carved archivolt. The architrave round the door will be carved with the signs of the Zodiac, symbolising the twelve months of the year with, over the centre of the lintel, the Agnus Dei—"Christ Crowning the Year." Over the entablature of the pillars, which stand one on each side of the door, will be figures of Praise and Prayer looking towards the tympanum. The tympanum, which is 5 feet in diameter, represents "Christ in Glory," seated upon the rainbow throne with an orb in His left hand, and the other raised to bless. Behind Him is an architectural canopy with His symbols, alpha and omega, on the capitals of the pillars. Round about Him are the Four Evangelists in appropriate attitudes, surrounded by a fringe of cloud, and accompanied by their symbols. Beneath the feet of Christ are the sun and moon, while over the background are scattered the seven stars of the morning. On the surrounding archivolt are seven angels with seven lamps or candlesticks in their hands.

The photograph by Messrs. Annan is from the model by Mr. James C. Young, who has ably carried out the ideas of Mr. P. Macgregor Chalmers, the architect of the church.

DESIGN FOR POSSIL PARK LIBRARY.

THE drawing by Mr. Bertram Lisle, which we reproduce, was exhibited this year in the Architectural Room of the Royal Academy.

SKETCHES FROM CAMBRIDGE.

THE drawings of gateways from Clare College and St. Catherine's College were made by Mr. E. H. Gibson during his tour as holder of *The Architect* Travelling Studentship for this year.

CLAYDON HOUSE, BUCKS: THE CHINESE ROOM.

CHIMNEY-PIECE AT DORCHESTER HOUSE.

THESE plates are of work referred to by Mr. A. E. Bullock in his series of articles on "Interior Decoration," recently published in *The Architect*. The chimney-piece at Dorchester House is the well-known work by Alfred Stevens.

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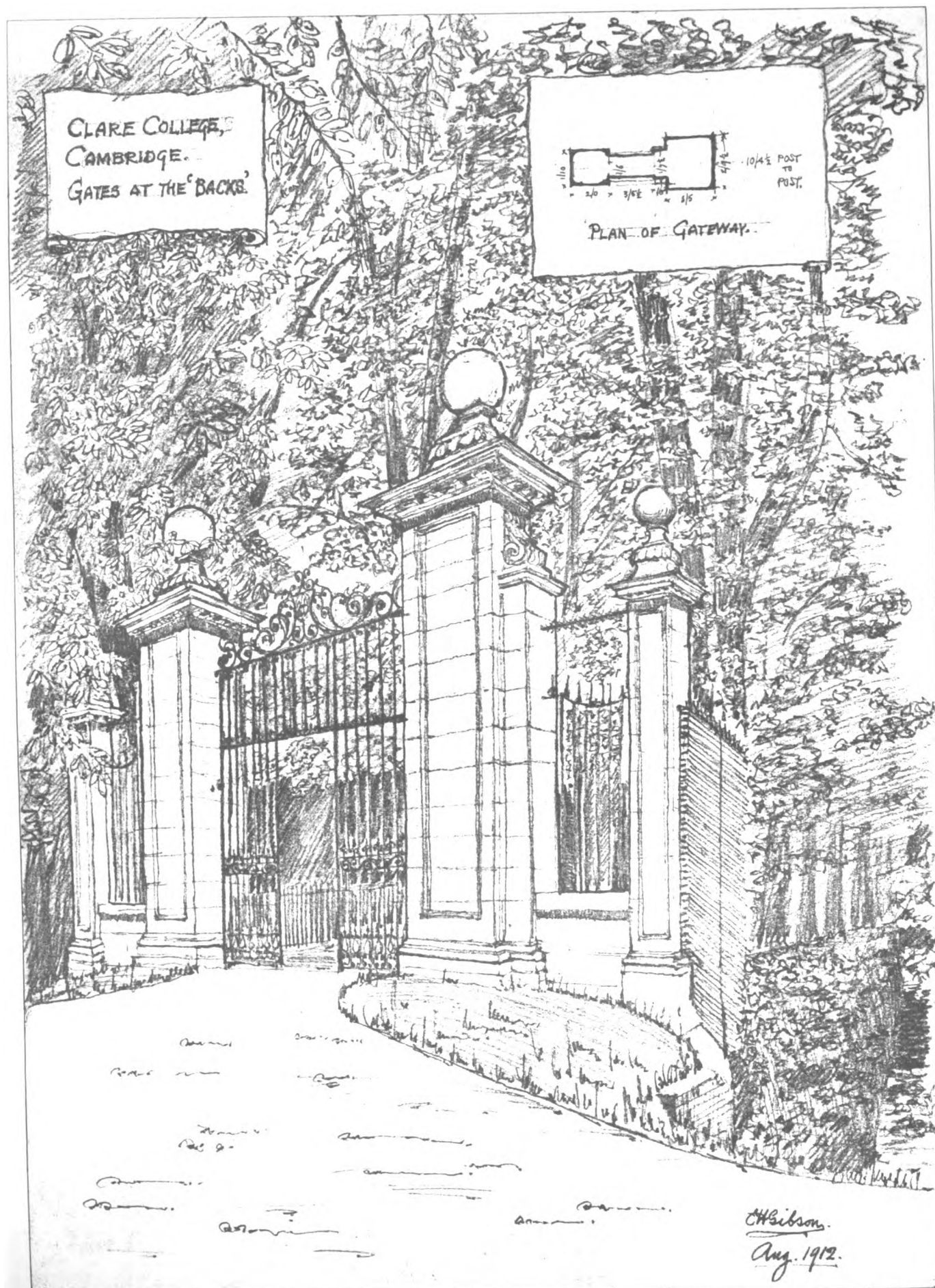
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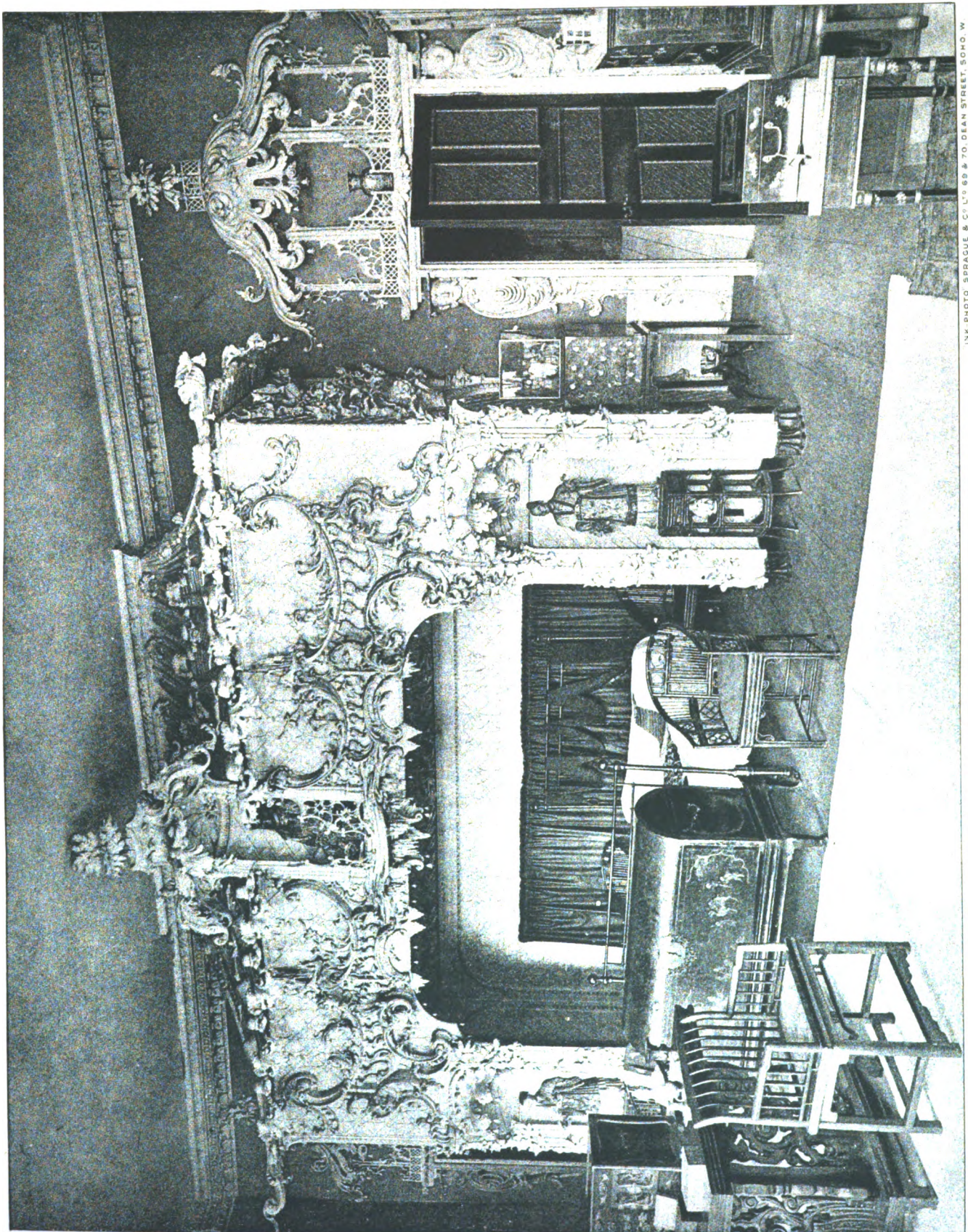


INK-PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1912.

Drawing by the holder, Mr. E. H. GIBSON

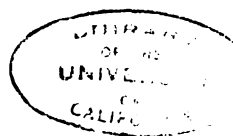




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CLAYDON HOUSE, CLAYDON, BUCKS: THE CHINESE ROOM.

CLAYDON HOUSE, CLAYDON, BUCKS THE CHINESE ROOM.





ST. ANNE'S CHURCH, CORSTORPHINE, EDINBURGH: TYMPANUM OVER THE MAIN DOORWAY.

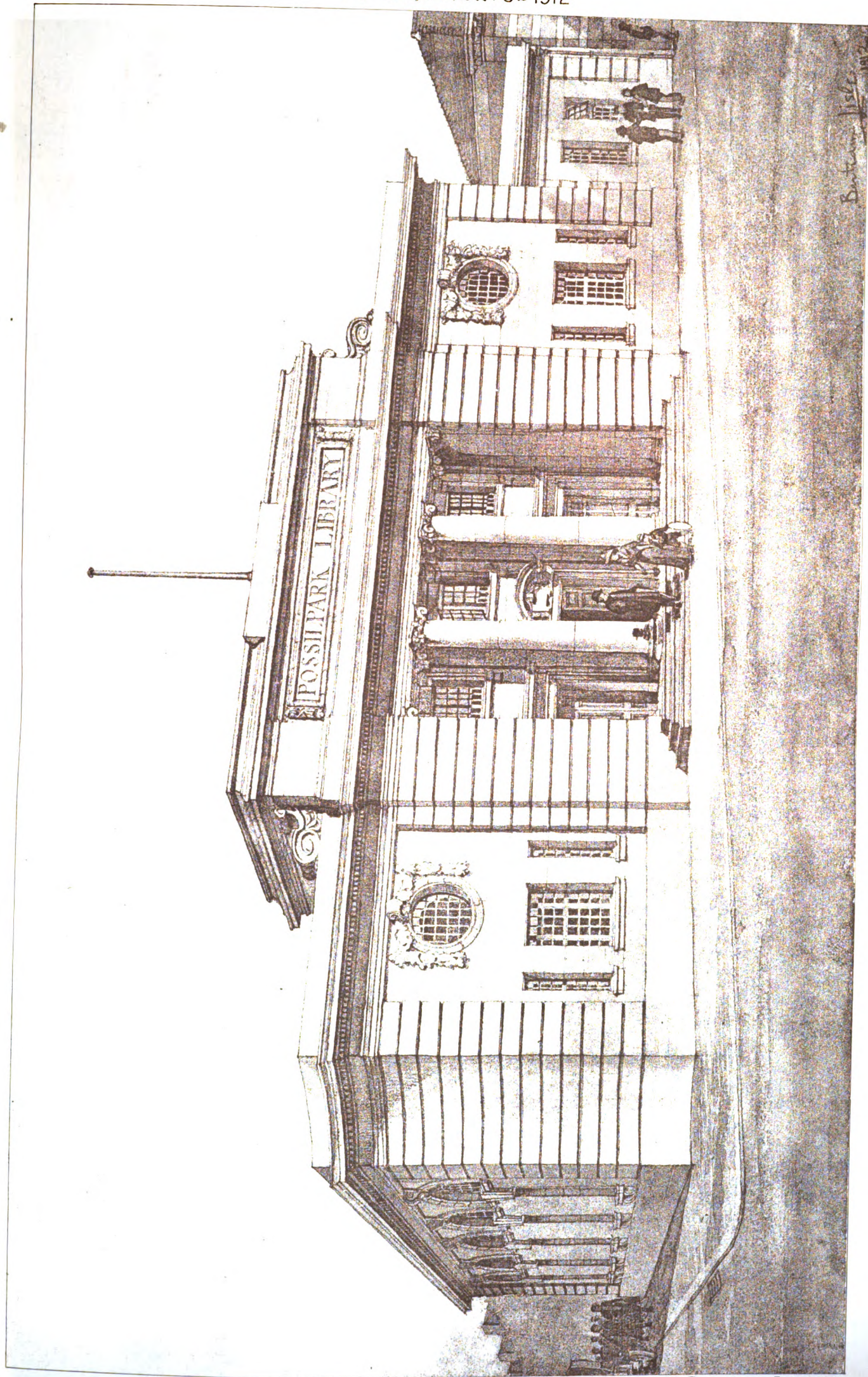
Mr. T. MACGREGOR CHALMERS, I.A., Architect.

Mr. JAMES YOUNG, Sculptor.

"INK-PHOTO" SPRAGUE & CO. LYS & 70, DEAN STREET, SOHO, W.

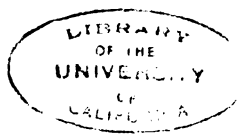
ST. ANNE'S CHURCH, CORSTORPHINE, EDINBURGH. TYMPANUM OVER THE MAIN DOORWAY.
MR. T. MACGREGOR, CIVIL ARCHT. & SURVEYOR.
INK PHOTO SPRAGUE & CO. LVS 68 & 70, DEAN STREET, SOHO, W.

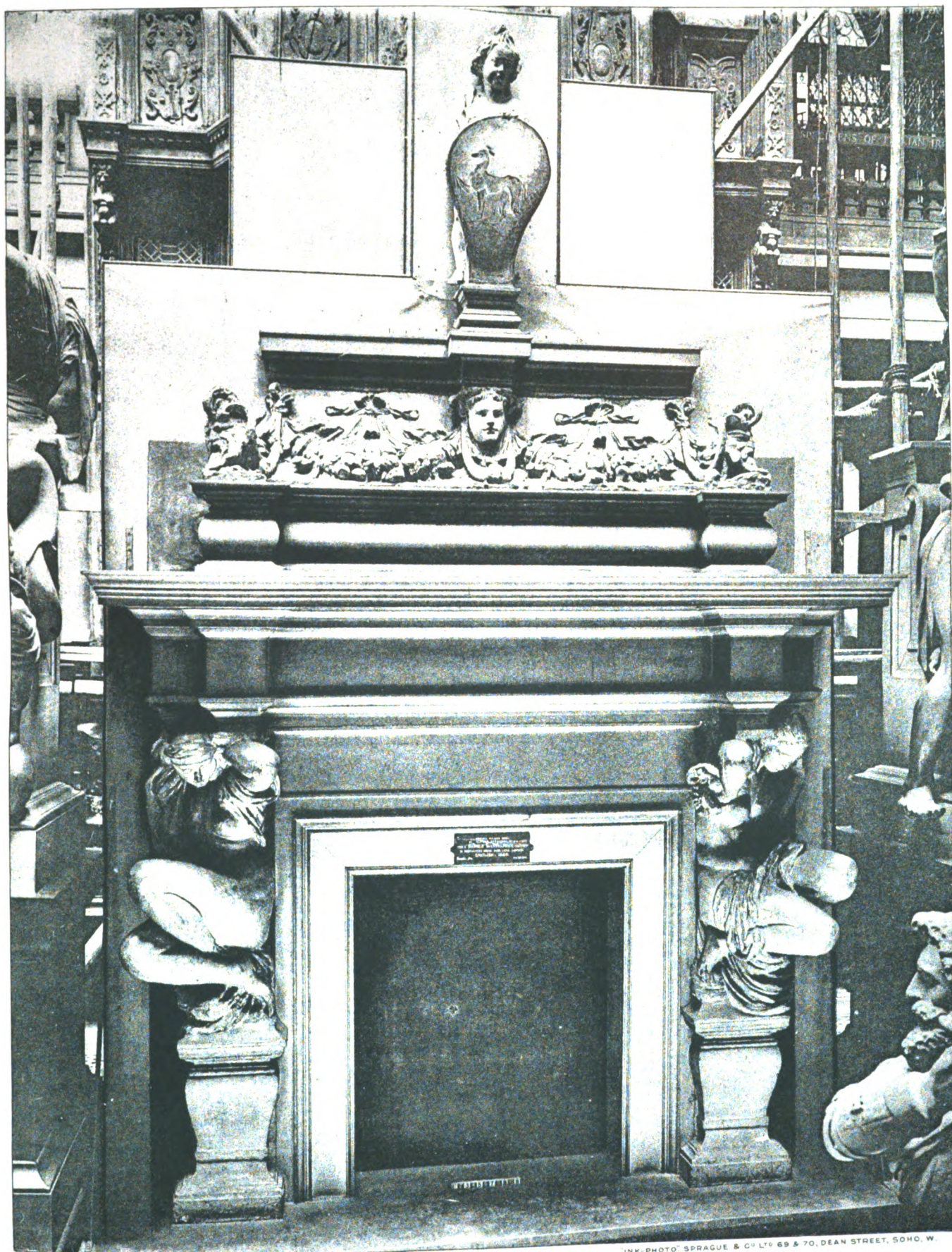
The Architect, Dec. 6th 1912



DESIGN FOR POSSIL PARK LIBRARY.
By MR. BERTRAM LISLE.

(Royal Academy Exhibition, 1912.)





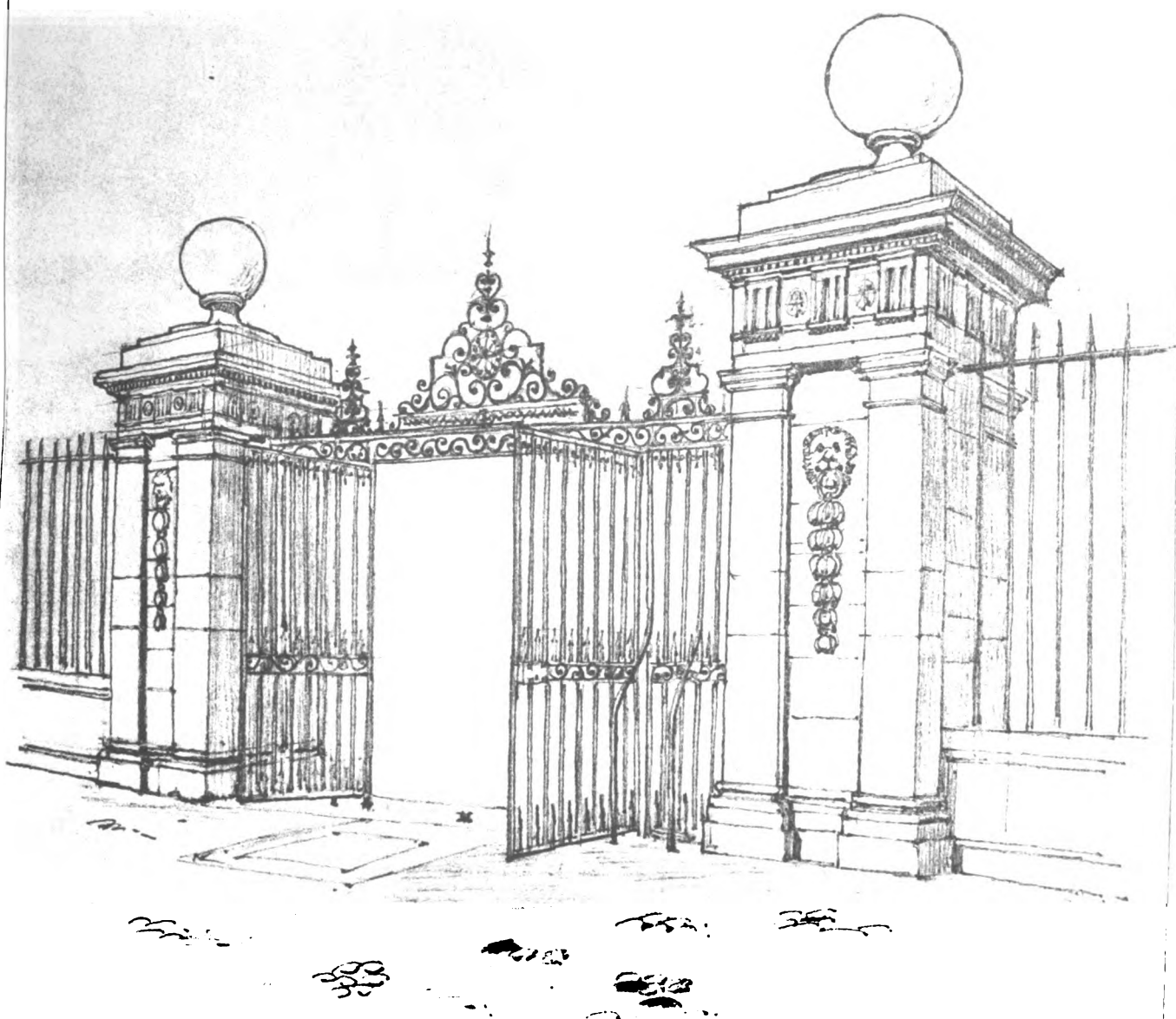
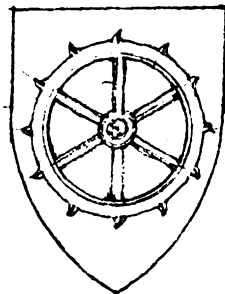
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PLASTER MODEL AT VICTORIA AND ALBERT MUSEUM OF CHIMNEY-PIECE AT DORCHESTER HOUSE.



The Architect, Dec. 6th 1912.

ST. CATHERINE'S COLLEGE,
CAMBRIDGE. ENTRANCE GATES.



E. H. Gibson.
AUGUST 1912.

INK-Photo SPRAGUE & CO. 69 & 70, DEAN STREET, SOHO, W.

"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1912.

Drawing by the holder, Mr. E. H. GIBSON

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MODERN METHODS OF INDIRECT LIGHTING.*

THE artificial production of light is perhaps the most inefficient and wasteful process to be found in any branch of engineering or science. Without attempting to discuss the reasons why this should be so, it may be said that this very fact is the strongest possible argument for the necessity for "efficient" lighting—i.e., for using such arrangements of artificial light sources as will most economically meet the demand for properly distributed light. Efficiency of lighting is here to be used in the wider sense of visual efficiency, and not in the narrow sense of simply physical returns for energy expended (i.e., lumens or foot-candles per watt of electricity or 1,000 ft. of gas). Systems of illumination cannot always be rated in terms of energy efficiency. In the case of lighting the term "efficiency" must be used in a broader sense of general visual efficiency, by which is meant the effectiveness of the illumination secured in enabling us to see things easily and in comfort.

Mr. Bassett Jones, in a recent paper on interior illumination before the American Institute of Electrical Engineers, says: "The work to be done by many lighting arrangements is not only to be able to see and work with ease and comfort, but also to make the interior pleasant to the senses, and make its beauty visible."

"It does not follow because the light used in setting forth a design of a library is not directly concerned with the actual business of the room that therefore the lighting equipment is inefficient. In fact, only a small portion of the generated flux need be used for reading, and still the system be highly efficient, since it makes the room effective and pleasant to see and to be in, whether one reads or not. It is quite useless to have beautiful things unless one can see them, and that illumination which properly sets them off in true value as to perspective, shadow, and colour is correctly designed, no matter how much energy is necessarily and purposefully used in obtaining the correct results."

"The frescoes of St. Peter's (or nearer home the dome and architectural beauties of St. Paul's and Westminster Abbey) are wasted unless they can be seen, and for this purpose the 'working plane' of illumination is on the ceiling, and not near the floor."

In approaching the subject of our discussion, not only is it necessary to have the foregoing considerations in mind, but also to remember that light and illumination cannot be measured in physical terms alone, but involve physiological and psychological facts and considerations as well.

More stress should be laid on the necessity for natural, rational, and comfortable illumination. Some systems of lighting in vogue are not only ineffective and inefficient, but positively annoying, owing to the exposure of glaring sources of light, which effectually defeat their real purpose.

Faults of this character are well stated in the following remarks of James Knox Taylor, Supervising Architect of the United States Navy:—

"For years architects have been devoting their time and talent to the designing of interiors, combining all the beauty of design possible with utility for their particular requirements. After painstaking effort, disappointment frequently results when on fixtures hung in the centre or around the sides of such interiors direct lighting units are mistakenly placed. Lumps of light—irritating, blinding sources, that lower the ceiling, shorten the room, destroy the lines, and ruin the effect the architect has striven for."

Faults and deficiencies of lighting have in the past been very largely due to a lack of suitable lighting appliances. It has only been in recent years that apparatus for producing satisfactory and effective illumination has been available. While the introduction of tungsten lamps, with their great increase in efficiency, has given a great stimulus to artificial lighting, yet it should be noted that as much, and even more, depends upon the efficient use of such lamps or light sources. The gains in efficiency of the sources can be further multiplied through the use of effective distributing appliances and the judicious arrangement of the lamps.

The whole subject of illumination and illuminating engineering is of quite recent date, but is now developing in a most rapid manner. Indirect illumination, which was scarcely known a few years ago, has already come into very general use.

INDIRECT ILLUMINATION.

The idea of indirect illumination is not exactly new. We have had indirect lighting installations in years past, the most well-known application being the "cove-lighting." According to this method lamps secreted in a groove or cove on the side walls just below the ceiling level, so that the reflected light is thrown out on the ceiling, and thus indirectly reflected on to the floor or objects. The limitations of such a system (which could frequently not be employed without structural changes in the building) and its comparative inefficiency gave rather a bad name to indirect lighting. This is responsible in a large measure for the very general impression that the indirect method of lighting is necessarily expensive and prodigal of current. The success of indirect lighting awaited the development of new and improved appliances. This result was secured by the introduction of the system known in America as "eye-comfort," and in England as the "eye-rest" system of illumination. This system of indirect lighting employs a fixture in the form of an inverted bowl suspended from the ceiling of the room. These bowls contain highly efficient and powerful reflectors of special mirror-glass construction. They are scientifically designed to give the most effective distribution of light for indirect lighting methods.

The reflectors used are known as "X-Ray," and consist of blown-glass blanks of correct form, which are in one piece and fire-glazed. These blanks are backed with pure silver put on by a special process, and this in turn is covered with an elastic enamel to protect and preserve it. The blanks are given a number of flutes and corrugations in order to prevent striations. These reflectors, as may be expected, are very efficient. Of 734 lumens generated by one experimental lamp, 612 are yielded from the reflector, which equals an efficiency of over 83 per cent.—a much higher efficiency than is given by any other reflector with which the authors are conversant, although we make a point of testing all we can obtain.

It will be appreciated from the foregoing description that the reflectors are opaque, so that opaque containers are also used. The latter usually take the form of bowls, which may be of metal, wood, glass, earthenware, plaster, &c.; so that, not only is there the possibility of an enormous number of different designs, but also a large selection of material from which to execute them. This makes it possible, not only to supply these fittings to suit almost any style of building, but permits of their forming part of the actual interior decoration. This form of lighting probably offers more scope in this direction than any other.

It should be noted that indirect lighting must be done in a really scientific manner to be successful, and herein lies the secret of the success of this particular system.

The success of modern indirect lighting has been remarkable, in that it was a purely practical and empirical development put forward in almost direct opposition to previous theories, and combated by many as impracticable.

In the attempt to get away from bare lights and excess brilliancy, the natural step was to increase the light-giving area. This was generally done by the use of diffusing globes over the lamps. The indirect system went a step further, and increased the light-giving area by using the largest available surface in the room—that of the ceiling. This was, however, somewhat too radical for the ideas of many experts, who could not agree to such a solution of the problem.

Yet the first development, applied in a small way, steadily grew, and its popularity forced many to reconsider their theories on this subject, and to study the causes which have contributed to this success.

VARIOUS SYSTEMS OF ARTIFICIAL LIGHTING.

The various systems of artificial lighting in effect to-day can be discussed under four headings.

(a) *Direct Lighting* comprises systems in which the greater part of the illumination is received directly from the light units or sets of lamps and reflectors.

(b) *Direct Lighting*, in which the greater part of the illumination is received directly from a light source enclosed in diffusing globes, as, for example, Holophane spheres, Holophane bowls, and Alba spheres.

(c) *Semi-Indirect Lighting*, in which the light is partly transmitted directly from the lighting units through a diffusing medium, and partly indirectly by reflection from the ceiling or other surface.

(d) *Indirect Lighting*, in which no light is received directly on the illuminating plane, but only indirectly through reflectors from a second surface or body. In the form of indirect lighting considered under this heading the light is directed away from the objects to be illuminated and

* Abstract of a Paper by Mr. F. W. Willcox and Mr. H. C. Wheat. Presented at a meeting of the Illuminating Engineering Society, held at the House of the Royal Society of Arts, 18 John Street, Adelphi, on Tuesday, December 3.

thrown upon the ceiling, from which it is reflected upon the working plane.

Class A.—Direct lighting with reflectors is, as is well known, by far the most generally used form of lighting.

Class B.—Direct lighting from diffusing globes or bowls comes next; the indirect and semi-indirect methods being more recent, have not come into such extensive vogue as Class A and B, but are making very rapid progress.

The author then made a rapid comparison of the merits of each system of lighting.

INDIRECT LIGHTING.

1. *Economy.*—While on the score of pure physical efficiency in lumens per watt, this system may stand below the others, yet in point of general visual efficiency its general results are comparable, and in many cases superior to the other systems. Even the physical efficiency of indirect lighting systems is often considerably ahead of that of installations which it replaces, so that the adoption of the indirect lighting system in numbers of cases actually reduces the energy consumed. We might here summarise the results of a test by Mr. J. R. Cravath on the lighting of a small room (*Transactions of the Illuminating Engineering Society, U.S.A., 1911*). Mr. Cravath made a practical test of the lighting in seven different forms. The results of the test gave the following relative efficiencies in lumens effective per lumens generated:—

	Per cent.
Direct lighting with prismatic reflectors on ceiling	52
Bare lamp at ceiling	40.9
Direct diffused lighting with 8-in. opal bowl at ceiling	33.7
Semi-indirect with inverted opal reflector	37.6
Indirect lighting ("eye-rest" system)	29.5

The results of this test applied in the form of curves showing variations at different points in the room from minimum to maximum are very interesting, and indicate the following facts:—

The differences in minimum illumination were very slight, and therefore approximately the same wattage was secured for any of the methods employed. Assuming that with general illumination the amount of power required must be determined by the minimum illumination, then the differences in efficiency above noted do not indicate similar differences in the cost of lighting the room. The higher efficiencies simply indicate a surplus of illumination in those parts of the room most strongly illuminated, and therefore this surplus can be regarded as a disadvantage rather than an advantage. On this basis—i.e., the greatest degree of uniform illumination with the minimum value as the determinant—the experiments do not indicate a more expensive scheme of lighting with indirect or semi-indirect systems than with other systems of lighting—i.e., for the same minimum illumination. The least efficient system on the pure physical basis of average lumens per watt is about as good as the most efficient, and considering the question of glare and comfortableness of lighting there appear to be material advantages in favour of the indirect system.

Efficiencies of indirect lighting can be much higher than the foregoing result shows, extending over 50 per cent. in favourable cases. As the efficiency of the "X-Ray" mirror reflectors employed in the indirect lighting equipment is 80 per cent., and the efficiency of the average calcimined ceilings (rough and smooth) is over 76 per cent., the total efficiency of reflection would appear to be above 60 per cent. with this system.

2. *Glare.*—Glare is undoubtedly reduced to the minimum by the indirect system of lighting. The lamps themselves are entirely hidden, and the greatest surface brightness, that on the ceiling, is very much lower than with any other form of lighting. The very large surface of the ceiling acts as a virtual source of lighting, giving almost perfect diffusion with an entire absence of the uncomfortable effects associated with glare.

3. *Shadow Effect.*—On this point the indirect lighting system stands pre-eminent. Shadows are less dense, and the edges softer. It would be a mistake, however, to assume that this lighting is shadowless, as this would make it objectionable. It casts shadows of a character which avoid their disadvantages, and secure the advantages by preventing any flat effect that may occur under other systems of indirect lighting such as cove-lighting.

It may be stated here that in comparison of shadows one must consider the contrast between the illumination in the shadow and the surrounding illumination. This is the reason why the shadows with indirect illumination appear so much less than with direct illumination, but it should be remembered that this system of lighting is not shadowless.

4. *Evenness of Illumination.*—The indirect system of lighting surpasses all other systems in this important point, and properly installed gives the best results from the fewest number of points. It is one of its important advantages that it requires much fewer outlets than the direct system. The difference is that with the indirect system of illumination we treat the illumination of a room as a whole, while with direct lighting we may have to treat it in parts or sections.

5. *Comfort and Agreeableness of Lighting.*—On this point it may be contended that the best results of all are obtained by indirect system. A restful and beautifully diffused illumination is obtained, the conditions resembling those when daylight enters a room through a skylight or obscured glass roof. With proper tinting of the walls the light can be toned to give rich, warm, attractive effects. Severe contrasts, glare, and heavy shadows are eliminated, with the result that the architectural features of the room appear to the best advantage.

It is perhaps the quality of "naturalness" which makes the illuminating effects of the indirect system so comfortable and agreeable. Now it is the characteristic of good lighting to be unobtrusive, just as a healthy organ of the human body operates unconsciously, and does not distract the attention of its owner. This is characteristic of daylight and all natural effects, in which we move and act without being conscious of their presence.

In the test by Mr. Cravath on the lighting of a small room referred to, it was found that the relative comfort of the various systems stood in the following order: indirect first, then semi-indirect, and then the diffused direct light with the opal bowl.

As has been well said by Ferree, "the problem in modern lighting is not so much how to see better as how to see with more comfort, and with less damage to the general health from eye-strain."

OBJECTIONS TO INDIRECT LIGHTING.

Inverted or indirect lighting is frequently subject to adverse comment on different points, and we will consider these in detail.

Brightness of Ceiling.—It is sometimes claimed that the surface brightness of the ceiling is excessive and uncomfortable, but tests made do not confirm this claim. Tests made by Mr. Rolph show that average white calcimine ceilings, both rough and smooth surface, gave a reflection co-efficient of over 76 per cent., and this value was obtained quite uniformly from any point on the ceiling—i.e., for any angle of incidence of the reflected light from the inverted fitting. This serves to show the large area of distribution of brightness on the ceiling, and the consequent low intrinsic brilliancy.

Surface Brightness of Various Light Sources and Materials used in Artificial Illumination.

Material.	A Candle-Power per Sq. In.	B Foot Candles.	C B/A.
Frosted Mazda Lamp	10.8	2,100	185
Holophane Stiletto Reflector (brightest part)	4.75	1,150	244
Holophane Bowls	2.38	480	202
Veluria Reflector	1.83	320	175
Alba	1.81	280	155
Opalax	1.40	240	172
Alba Dish . . . . .	.9	192	214
Ceiling above Concentrator . . . . .	.12*	23	192*
Ceiling above Diffuser . . . . .	.065*	12.5	192*

* These figures calculated only.

A number of tests made on this point at Rugby yielded the results given in the accompanying table. All the tests were made with ordinary 60-watt Mazda lamps maintained at constant voltage. Two different sets of observations were carried out, one with a photometer and one with an illuminometer. Both these are given on the table, the first column giving values of candle-power per square inch (obtained with the photometer) taken at a distance of 10 ft. from a luminous source, and the second column giving foot-candles read on the illuminometer at a distance of 18 ft. from the source. The third column gives the ratio of the first and second. It will be noted that the last figures of the table represent two different results for ceiling brightness above an inverted fitting. These two results represent the maximum value obtained with two different reflectors giving respectively a concentrating and diffusing distribution of light.

This table shows the very low degree of brilliancy and intrinsic brightness of the ceiling, and should effectually answer all criticism on this point.

The intrinsic brilliancy (in candle-power per square inch of ceiling) with indirect lighting is probably not over one one-hundredth of the brilliancy with many direct lighting systems.

Brightness of Walls.—On this point we might say that there need be no such condition, since the walls can be tinted to any degree of subdued shade desirable. It is hard to understand, however, how the brightness of the walls can be made any objection, in view of the fact that in ordinary daylight effects a large part of the illumination comes in through the windows, and is reflected from the side walls. Where the personal taste of the occupant permits brightness of the walls we have here evidence of considerable horizontal component from indirect lighting, which has considerable value in the lighting of pictures on the walls and the faces of the people in the room. There is no system of lighting that equals indirect lighting for bringing out the pictures on the wall, and it is the invariable comment of the people, seeing this system, that the "pictures look beautiful," and that people can be more easily recognised at a distance in the interiors of large buildings.

This horizontal component of indirect lighting is a valuable factor in the illumination of vertical surfaces, and far from being a disadvantage, is one of the advantages of indirect lighting, which is apt to be overlooked in estimating the value of the illumination solely by the amount of foot-candles given in the horizontal plane.

(To be concluded.)

FRENCH RENAISSANCE ARCHITECTURE.—VIII.

In the eighth lecture of the course now nearing completion at University College, Gower Street, W.C., Mr. W. H. Ward, M.A., A.R.I.B.A., treated of "The Style of Louis XV. The Palladian-Rococo Compromise."

In his opening remarks Mr. Ward pointed out that the first half of the eighteenth century, which included the last fifteen years of Louis Quatorze and the first thirty-five of Louis Quinze, is marked in architecture by an apparently anomalous state of affairs. On the one hand, the tradition of the Grand Manner maintained its sway almost unabated as regards exteriors, while its decoration assumed a character of "sans-gêne" totally at variance with academic canons and ponderous stateliness. Yet the two divergent tendencies are combined into something like harmony, which Mr. Ward called the Palladian-Rococo compromise.

The explanation of the seeming contradiction lies, as usual, in the life and thought of the times, as well as in artistic considerations. The Grand Manner in architecture fitly expressed the pomp and grandeur of the French monarchy at its climax, and its stately tradition persisted amid contrary fashions just as the State ceremonial continued unabated, in spite of declining fortune. The principal means towards its persistence were twofold—first, the influence of the Royal Academy of Architecture, with its teaching based on the sixteenth-century writers on ancient architecture and design, and, secondly, the chief posts in the Royal buildings department remained to a large extent in the hands of architectural families, many of whom belonged to the Academy, and who had a long professional tradition behind them.

With the last years of the Grand Monarque its glamour faded, and there came a reaction when, after reigning seventy-two years, Louis XIV. passed away in 1715. The gaiety of the earlier part of his years had been superseded by empty pomp and later by hard bigotry. The new desire for ease felt by society is expressed by the refinements in planning of their luxurious private houses, and by the sprightly unrestraint of their decorative code. It was the age of "salons," where good manners, good taste, refined amusement, and brilliant conversation formed the only business of life.

It is, therefore, in the private house, and especially in the salon and its decoration, said Mr. Ward, that we find the most characteristic expression of the age. There had been a relative halt in the building of private houses during the time when the spell of Versailles was supreme. But from 1690 onwards Paris and its neighbourhood began to be covered with both great mansions and fashionable small houses. Modification in internal arrangements had already begun to appear in the early part of Louis XIV.'s reign. The tendency towards lightness and brightness was developed until by the first quarter of the eighteenth century there arose a type of decoration transitional between that of Louis XIV. and Louis XV., which is known under the name of Regence. With all its flowing and fluttering ornament, design still had a firm fixed basis of straight lines and a structural framework of dados, cornices, and orders.

This characteristic, however, disappeared in the fully-developed Louis XV. style, which has for its main charac-

teristics an almost complete elimination of orders, of right angles, of heavy mouldings, and other members casting shadows. A love for free flowing lines and naturalistic vegetation came to the fore. However much one may deplore the immorality of contemporary life, one must at least admit, said Mr. Ward, that this Rococo style was completely appropriate to the artificial manners of the time. In France, where it is almost wholly confined to decoration, there are certain types of ornament and subject which constantly accompany it. The first of these is the Rocaille, which is more or less based on the forms of shells, and have their crinkled or fluted surface and the scalloped and laminated edges. A second type of ornament is the palm tree. In the Royal palaces of Louis XV. the Rococo never goes to inordinate lengths, but in private houses full rein was given to every caprice and to indulgence in the fullest informality. A complete example of this manner is to be found in the Hôtel de Soubise in Paris, now the National Archives.

The general scheme of colour employed was usually in light tones, various shades of white with pale olive or citron, straw or rose colour, and the ornamental portions artfully gilded in different tones of gold. The smaller panels over doors and chimneypieces were filled with pictures, the tall ones with mirrors (obtainable by this time in larger sheets), or, like the ceilings, with one of the many types of arabesques.

No single entire building seems ever to have been erected in the Rococo manner. The only portions of elevations which are affected by it are, as a rule, the few decorated features. In some cases, particularly in the provinces, or in "bourgeois" houses, where taste was less fastidious, they are sometimes rather profuse. But in the case of the best work of the period, among which are a number of aristocratic mansions in Paris, this is not the case. Two examples of the latter are the Hôtel de Matignon in the Rue de Grenelle (now the Austro-Hungarian Embassy) and the Hôtel de Moras or Beron in the Rue de Varenne.

The first part of the reign of Louis XV. was not fruitful in palatial architecture. His Government, however, though generally sluggish and incompetent, carried out an important, if fitful, policy of public works in the great cities of France, as at Bordeaux, Lyons, Dijon, Nantes, and Rennes. At Nancy a scheme of town planning was carried through which is remarkable for the completeness of its artistic treatment and for its preservation to the present day.

With this splendid example of the potentialities of the Rococo-Palladian compromise, with its traditions of the Grand Style inherited from the seventeenth century, Mr. Ward closed his survey of the style of Louis XV.

VICTORIA AND ALBERT MUSEUM.

IMPORTANT acquisitions have recently been made in the Department of Woodwork in the Victoria and Albert Museum, South Kensington, W.

Three of these acquisitions are additions to the collection of mediæval woodwork. The earliest is a French casket of the fourteenth century, which is stated to come from the Church of the Holy Trinity at Eu in Normandy. This casket was presented to the Museum by Mr. Murray Marks; it is of oak, gilt, and elaborately carved with Gothic tracery, the mounts being of gilt copper, and the interior painted with the Coronation of the Virgin and the symbols of the four Evangelists (exhibited in Room 51). A pair of oak cupboard-doors from Northamptonshire, painted with scenes representing the orders of Angels, dating from about 1500, are exhibited in Room 7. Of about the same date is a standing livery cupboard carved with open Gothic tracery; the ostrich feathers which form part of the decoration probably represent the badge of Arthur Prince of Wales, eldest son of Henry VII. This was found recently in a farmhouse at Burwarton, Shropshire, and was presented by Mr. Robert Mond, F.S.A., through the National Art Collections Fund (Room 6).

A fine piece of panelling, bearing the date 1546, has been purchased from a house known as Beckingham Hall, at Tolleshunt Major, Essex (Room 52). It is elaborately carved, with decorations in the style of the Renaissance, among which are the Royal arms as borne by Henry VIII. and those of Stephen Beckingham. The old Hall at Beckingham, from which the panelling originally came, was built by Richard Beckingham on an estate granted to him by Henry VIII. in 1543.

The Museum collection of painted wooden roundels (also in Room 52), which were in use in Elizabethan and Jacobean times, has been enriched by a very uncommon set consisting

of twelve pieces enclosed in a turned case, each painted in silver and gold on black, with figures wearing costumes of the period of James I.

An important example of early English lacquer is shown in Room 55. This is a cabinet of the period of Charles II., mounted with brass and decorated with raised lacquer in gold and colours on a black ground. The carved stand is silvered; this is an unusual feature, gilt being more usually employed for such a purpose. In the same room is a Queen Anne writing-cabinet, which is stated to have belonged to Dean Swift: it is veneered with walnut and decorated with fine marquetry-work, and is fitted with glazed doors above and with a secretaire below. It is figured in Macquoid's "History of English Furniture."

A gap in the historical sequence of English panelled interiors has been filled by the presentation from the National Art Collections Fund, assisted by a body of subscribers, of a panelled room of about 1730 removed from No. 26 Hatton Garden. The panelling is of pine, with elaborately carved mantelpiece, doorways, and recesses. (It is exhibited in Room 56.)

A fine example of English painted satin-wood in the form of an urn-shaped knife-box is placed in Room 57.

Of recent gifts not already noted, a so-called bridal chair of Saracenic work, which has been given by Mr. Rowland Ward, F.Z.S. (shown in Room 42), and two six-fold screens deserve special mention. One of these, which is of tooled and painted leather, and is probably Dutch, was given by Mr. Percy Woods, C.B., and is shown in Room 21; the other, in Room 41, of black and gold Chinese lacquer, was presented by Mr. S. Mavrojani.

THE PROSAIC IN AN ARCHITECT'S WORK.*

(Concluded from last week.)

THERE is one subject of vital importance in architectural work which comes within the latter category. This is the subject of structural design, within which may be included at one extreme the formation of the simplest type of cottage roof, and at the other such undertakings as the conception and elaboration of a dome like that of St. Paul's or a bridge like Waterloo Bridge. Most modern architects are exceedingly inconsistent in their treatment of this subject. So long as the problems to be solved are of a similar character to those which have been dealt with by members of his profession for centuries past, the average architect has no hesitation in applying his mind to them; but, given problems of a new character, and the use of new materials, he at once says, "These questions are beyond my ability and experience; I must call in the engineer." As a result the services of the architect are often dispensed with entirely, or, when he is employed, we obtain structures that are the design of two persons working from entirely different standpoints. If, as usually happens in the case of a bridge, the engineer is responsible for the initial scheme, the work of the architect, if he is not ignored altogether, is restricted to the application of ornamental features—or features that are intended to be so—to the engineer's design. The thought that the chief beauty of a bridge is in its general lines rarely appears to occur to either party. On the other hand, in the case of a large structural feature of a building, the architect first evolves the design, paying principal attention to the question of appearance. When complete, he turns it over to the engineer with a request that he shall settle in all details the form of the construction. Perhaps a few hours afterwards the same architect solemnly and—absurd as it may seem—in all honesty holds forth to students on the well-worn text that construction is the basis of all true design.

The reason for this failure on our part to place on a truer basis the more advanced branches of modern architectural design is undoubtedly a strongly rooted dislike of the study of the—to most architects—uncongenial subject of structural design.

It will be of interest to take note of the attention which is given in the several architectural colleges and schools to the subjects dealt with in this paper. The subjects of the building laws, the law as to light and air, and the law of contracts are usually classed, with a few other branches of work, under the heading of professional practice. Outside London it appears, from such information as is available,

that practically no instruction is given in these subjects in architectural schools. In most London schools a certain amount of attention is given to the building law, but apparently it is only in the Architectural Association schools that a general course of lectures on professional practice is given. Having regard to this, it may seem rather uncharitable to adopt a critical attitude, but criticism cannot be disarmed by the mere provision of a course of instruction without reference to the value of the course. A policy of declining to teach certain subjects is perhaps more capable of defence than one of arranging a course, which, on the face of it, is too short to enable the subjects to be taught properly. By the establishment of the course it is presumably conceded that the subjects included are ones of which an architect should have some knowledge. But under the present arrangement a student completes three years' training before he is officially informed that such subjects exist. Proper knowledge of any subject can only be obtained gradually; years rather than months are usually required. It therefore seems to be more than probable that the value of a course of lectures on professional practice, delivered to students towards the end of their training, would be greatly increased if students in their first year were brought in some way into touch with the elements of this important part of an architect's work. Doubtless this criticism can be met with the retort that during a period limited to four years it is impossible to teach everything. The problem of the training of the embryo architect is certainly a difficult one, and it must be admitted that the Architectural Association schools afford about the most levelheaded architectural education that is given anywhere.

In most architectural schools throughout the country the subject of structural design is in part taught under such titles as "mechanics of structures," "theoretical construction," "graphic statics," &c. But the teaching is usually confined to the dry-as-dust mathematical side of the subject. Other classes are held in which is taught the science of ordinary building construction, and there are, of course, yet other classes in what is termed "architectural design" where the treatment, however, is usually restricted to questions of planning and to the design of elevations on approved historic lines. One feels compelled to ask why it is not possible to teach the subject of architecture by dealing with a building from all standpoints—the planning, the construction as determined by mathematical calculations and ordinary practice, and the treatment of the constructional features in such a manner as to produce real and virile architecture. There are certain cases where we are instructed not to let the right hand know what the left hand does, but there is no authority for applying this precept to architectural education.

It is hoped that sufficient reasons have been produced to justify the statement that the various subjects in our work, which are usually stigmatised as dull and uninteresting, are nevertheless of very considerable importance. If this is so, it surely follows that they should be given a place in the forefront of an architect's studies. In no art, profession, or business is it contended that if certain studies are uninteresting they should therefore be neglected. In any case, if the established members of our profession demur at pursuing these studies themselves, they may not be unwilling to see them made compulsory in the case of students. This would afford still further grounds for the older men to expatiate on the increased educational advantages under which the present generation of students pursue their studies.

The time has now come when the title of this paper may be thrown overboard. These subjects as a whole are not prosaic. Of course, a good deal depends on the general outlook of the individual. There are persons—you find them principally on the Practice Committee of the Institute—who look upon the law of contracts as a highly enthralling subject. Up to the present I have not been touched with this enthusiasm. The building law, however, exercises a certain attraction. In studying the details of this subject there is always the zest of exploration. New uncertainties are always inviting investigation. The modern geographical explorer is beginning to have rather a bad outlook. Before very long the world will be so well explored that there will be nothing fresh for him to discover. But the person who takes as a field of exploration such a subject as the London building law need have no fears in this direction. As soon as he becomes reasonably familiar with the various by-paths he will find that the County Council have amended the law and there are fresh points for him to investigate. The subject of rights of light is by no means uninteresting, and

* A Paper read before the Architectural Association on November 25, by Mr. Horace Cubitt.

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RESIDENCES IN FLATS, BERLIN.—Herren HEINRICH & KAPROWSKY, Architects. [From *Berliner Architekturwelt*.]

should appeal to two distinct classes of architects. Those who like a battle of wits will find ample opportunities for a display of their abilities in the negotiations which are so often involved. Those who are interested in such subjects as geometry and optics may usefully devote time to the study of the effect of obstructions on the varying degrees of light received by ordinary buildings in thickly populated districts.

That the subject of structural design can possibly be considered prosaic is a most serious reflection on our modern method of training. The Roman architects and engineers who erected the mighty thermæ, aqueducts, bridges, and amphitheatres, which are still the wonder of the world, obviously did not consider the subject of structural design dull and uninteresting. The Gothic builders, it may be

assumed, took as keen a delight in the logical scientific construction of their buildings as they did in the execution of the mouldings and carving with which such construction was embellished. Coming nearer to our own time, it is only reasonable to suppose that the "great mathematician" expended as much thought and labour on the fine structural scheme for the dome of St. Paul's as he did on the design of any other feature in the building. It is necessary for us to realise that structural design is not a mere matter of calculations and formulæ. These things, however necessary they may be, are but means to an end, such end the achievement of a living architecture, founded, as was the case with all the historic styles, on the basis of logical construction.

Mr. Max Clarke, in opening the discussion, said that

for years at the Architectural Association he had advocated that the younger men should always make the speeches; he again advocated that the President should in future call on the younger members—especially the very young ones—to propose the votes of thanks and to second them. All architects were not hopelessly deficient in art; but the majority were hopelessly deficient in making a speech. To correct that defect it seemed to him very desirable in a place like that, where they were more or less at home, that the students should begin to speak in public. If they never began they would certainly never get on. He had to congratulate Mr. Cubitt on having the audacity to come there and tell them that they were not conducting their business in a proper manner. Whether he was right or not was a matter of opinion. Mr. Cubitt certainly deserved some amount of praise for the trouble taken in putting the paper together. Personally it did not seem to him a compliment to Mr. Cubitt that when a paper of that sort was read there were not many present in the room, while when a more interesting paper is given it is crowded. It was those matters which Mr. Cubitt was pleased to call "prosaic" which do not appeal to the younger or to the older generation. If he had his way he (the speaker) would never deal with a light and air case or a schedule of dilapidations. Some of those present would begin by sitting in their office for a year or two with nothing to do, until one day a man would come in and ask if they would draw up a bill of dilapidations for their property. If the young architect said "no" he would probably lose that client for ever. He had heard of a young architect who, on being asked by a client if he would make a survey, replied he would not, as he was waiting for an architectural job. One of the very first things a young man ought to learn was to measure a piece of ground and take the levels of it. The practice of architecture was very much in the clouds. Many of them commenced by hoping they would get a palace to design, and it ended by their getting a cottage to build for £150, or a cottage for £450 which usually cost £600. Should the young architect get one of those he had much to be thankful for; and if he cannot build a cottage and survey a piece of land he will never be able to build a palace. He disagreed with what Mr. Cubitt had said about the quantities. It had become more or less a practice for architects who were busy never to write their specification themselves; but again, if the young man cannot write a specification for a £150 cottage he will never build a palace. Moreover, if the student did not learn these things at the A.A. it was difficult to see where he would get the knowledge. He considered that unless a man was competent to do that he was not competent to design a building, not knowing how to put it together. He believed in excellent draughtsmanship, for it was one of the first things a student should learn, and in that he included design. If one was able to do that one might get a prize, and the latter was a sort of advertisement. An architect was much hampered because he could not insert an ordinary advertisement in the papers. His other method of advertising was to get a prize, and the next stage was to win a competition. If the young man could write a real specification there would be no difficulty in getting from that to the stage of preparing quantities. It was a good thing to know something about the latter, because it taught construction and a thousand and one things one ought to know but does not. One of the dreadful things for an architect was extras. His own opinion was that they would not creep up in the way they do if the architect knew exactly the amount of money he was spending and honestly told the client that such and such a thing would cost so much. He had been talking to an architect who told him that the extras on a particular job only amounted to £25,000, and for £5,000 of that he had still to go and settle with the client "if he could"! Some clients were becoming intractable in the matter of extras, and the Courts were upholding them more than they used. When a man got a fine practice he was able to pay anybody he liked to do all the things which were distasteful to him; but until he gets it he had to do them for himself. The question arose as to whether the architect can get the expert paid by the client. The position was awkward, for if the architect paid the expert himself he would have very little left for himself. Consequently the more the young architect could learn the more commission there would be and the better equipped he would be. He disagreed with what Mr. Cubitt said about the district or other surveyor; that official had no right to pass an opinion upon the plans—his province being to see that the architect did not go wrong in his actual work. He

might mention that he was a member of the Institute's Practice Committee—and that he detested the job. The Royal Institute had published a form of contract which did not safeguard the architect or the client properly. The only thing he was interested in was to get the Institute to alter the document and to bring it up to date so as to conform with the various Acts of Parliament, &c. He could assure them that from his own point of view he was not enthusiastic; but he thought somebody ought to take the matter in hand—the sooner he had done with it the better he would be pleased. The architect required to be always thinking about his work. It was an open question whether they could be thinking about football, dances, &c., and be learning architecture at the same time. In the main he agreed with Mr. Cubitt's paper, though with some points in it he did not. The thing that occurred to him was how on earth the student covered the multitude of subjects he did already. He came into contact with the A.A. work submitted in the Institute's examinations, and he thought it reflected the greatest credit on the teaching of the Architectural Association.

Mr. Alec G. Horsnell remarked that in the course of his paper Mr. Cubitt had reserved his opinion as to whether the subjects he advocated were or were not prosaic. Really he himself did not think they were. He considered them, in fact, most interesting. For instance, the grasping nature people often revealed in connection with ancient lights was in itself a study of human nature, quite apart from anything learnt as to law. But he did not think such things had anything to do with architecture. The architect's mind required something entirely different to what was required, say, for preparing quantities. Mr. Cubitt had opened fire on them, and no doubt some of them were slacker in the subjects discussed than others. But the architect can always go to someone for advice, and it was hard to understand why he should not do so.

Mr. Louis Jacob thought that the matters mentioned by Mr. Cubitt, whether prosaic or not, were most important to an architect starting practice. Apart from the fact that he may lose a client by not being able to do such things, it would be found that the client's lay mind can best appreciate such questions. That was an unfortunate fact, no doubt, from the architect's point of view. An architect will always find it desirable to take his sketches to the district surveyor and talk matters over with the officials in a friendly way, for he will learn more in that way than by hours of study of the regulations. Speaking from his own experience, he could say he had always found the surveyors most courteous. The law on those matters wanted codifying, especially in London. Among the many things he had started on was this codifying, but he gave it up, as the project was too gigantic. Unfortunately the Colls case was immediately modified by the decision in "Kine v. Jolly," which decision seemed to him to be a gross miscarriage of justice and to make confusion worse confounded. An architect in a big practice would not bother himself about such outside matters. One piece of advice was that whatever an architect did he was to keep solicitors out of any case he might be engaged in. Unfortunately, though the R.I.B.A. Conditions of Contract were unsatisfactory, the builders declined to alter them.

Mr. A. O. Collard said that Mr. Cubitt was well known to most of those present as editing that valuable "Building in London." When he first saw the book it struck him as so useful that he advised its inclusion on the list of works recommended to the students of the A.A. Perhaps a better title for the paper that evening might be "The Mosaic in an Architect's Work." The word "prosaic" did not apply to any aspect of such work. Many papers on architectural subjects seemed dull because architects were not all endowed with sparkling wit. He believed it to be absolutely correct for architects not to undertake the valuation of properties or the preparation of the quantities. Architects cannot be supposed to have the time to do everything for themselves. If any young architect were called upon to undertake a valuation he would advise him to have nothing to do with the offer, or at any rate to call in the help of someone who understands the work. Most architects were willing to drop their use of the word "surveyor" and to call themselves simply architects—assuming that the greater included the less. The words architect and surveyor are both old, and it is known that Wren always was called surveyor. A mistake in a musical composition such as Mr. Cubitt had alluded to by way of simile did not involve other people; whereas a mistake in an architect's work did. It should not be necessary to lop a design, as

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"KAUFMANNSHAUS," BERLIN.—Herren ADOLPH WOLLENBERG & EMIL SCHUSTER, Architects. [From *Berliner Architekturwelt*.]

described by Mr. Cubitt, if it were submitted in its pencil stage to the district surveyor. He believed an architect would welcome being associated with an engineer in the construction of such a beautiful thing as a bridge. He was not aware before that evening that the subject of structural design was to most architects uncongenial. He himself considered it most thrilling. It had occurred to him that the subject of professional practice might be dealt with earlier in a student's work than it is now. But he had found when they do come to take up the subject they were not altogether ignorant of it. He honestly

believed that by the fourth year the student mind was most open to the subjects dealt with under professional practice. It was a constant endeavour with the staff at the Association to see those subjects were not dull and uninteresting. He was not at all sure whether really the students would get much advantage by tackling them earlier than they do at present. He could assure Mr. Cubitt there was scarcely a moment to spare. If any work were knocked out to make room for the suggested subjects the curriculum would not be so satisfactory. They could not crowd into the lives of the students more than they do now.

The President, in summing up the discussion, said that it had been his intention to say something from the students' point of view, as the younger members had not risen to speak. But Mr. Collard had already done so. It was not possible for the student of architecture, at any rate in his second or third year, to go very deeply into the important matters raised by Mr. Cubitt. He had too much to do in subjects of purely architectural quality. In the student's fourth year it was a different thing. If a man came to the Architectural Association schools for the fourth year he was working during the day-time in an architect's office, and he would be there brought into touch with these points of professional practice. In the excellent course of lectures on professional practice in the schools he was able to acquire a working knowledge of what it was necessary for him to know. Of course, those lectures only gave the student a thorough outline. Such special subjects as quantities engaged the whole life-time of those who properly took them up. It was really very much better for a young practitioner not to take up subjects he did not thoroughly understand, for he could always call in an expert. He entirely agreed with what had been said about discussing questions with the district or other surveyor. Such an one was a very valuable person, and if architects brought their drawings to him before they were inked in there would be fewer mistakes made in practice. District surveyors were gentlemen of the utmost courtesy and most anxious to help their professional brethren. With reference to Mr. Cubitt's remarks about the attitude of the student to structural design, he would remark that if there was one subject which interested a student more than another it was that; he was taught from the very first that structure was at the root of his design, and that he could not make a proper design without considering it from the structural standpoint. The subject was dealt with very thoroughly in their curriculum.

Mr. Horace Cubitt, in briefly replying to the vote of thanks, said that everyone ought to know enough of quantities to know he should not do them himself. If structural design was adequately taught it was a curious thing that it was a general practice for modern architects not to design their own steelwork. Surely steelwork was structural design? It was difficult to see how an architect could maintain that construction was the basis of his design if he got someone to do his construction for him. At present the construction was muddled through after the architect has designed the elevation and made the plan. It seemed to him illogical that an architect should be expected to be able to design a grain silo, but not a bridge. Everyone could get a certain degree of knowledge, so that it would be possible for him to know how to design something after the manner of those who designed in past centuries. It was a mockery for architects to assert how fond they were of structural design, and then to admit they were not capable of doing it and that it was an engineer's job.

At the end of the meeting it was announced that the next meeting will be held on December 9 at 8 p.m. Papers entitled "The Practice of the Crafts in Modern Building" will be read by various members. It will be a combined meeting with the Art Workers' Guild.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

Fire Protection in London and the London County Council.

SIR,—Since drafting my letter of November 25, which you did me the honour of printing in your last issue, the Chairman of the Building Act Committee of the London County Council (Mr. Taylor) has been at pains to show that his Building Act Department has been more active during the past seven years in dealing with the London Building Act Amendment Act of 1905 than indicated in my communication, where I pointed out that only 527 buildings had on official showing been put in order up to June 12 last, and that some 50,000 cases were awaiting the Council's attention.

Mr. Taylor, in the interests of the County Council, emphasises the fact that 1,043 certificates were granted in respect to new buildings under Section 7 since 1905, and he also put on record that 351 cases have been disposed of under

Section 11 and 4,430 applications for exemption have been granted under Sections 10 and 12.

I had no reason for complaining of inattention to new buildings, for I was fully aware that these new structures in respect to which the owners deposit plans are dealt with as a matter of routine.

I was complaining of *existing* buildings, and, my letter being due to the deaths resulting from the Kensington fire, I naturally referred to buildings coming within the same section of the Act as Messrs. Barker's premises, i.e., Section 9.

In putting forward the fact that 351 cases have been settled under Section 11 and 4,430 cases under Sections 10 and 12, Mr. Taylor has raised an entirely new issue as to a further class of existing buildings, which I also consider to have been badly neglected by the London County Council, even if perhaps not as markedly neglected as those coming under Section 9. This class of building includes the dangerous "projecting shop" and a large number of smaller buildings, exceeding 30 feet in height, occupied "other than as a dwelling-house by two or more families."

According to the evidence of the Superintending Architect before the House of Commons, no less than 48,566 such cases under Sections 10 to 12 have been notified to his Department as requiring attention. Thus, in addition to there being some 50,000 cases awaiting attention under Section 9, there are to-day as a matter of fact also some 44,000 cases still awaiting attention under Sections 10 and 12.

To put it quite plainly, Mr. Taylor, being dissatisfied with my complaint in respect to the 50,000 cases, now compels me to point to a further 44,000 cases, making 94,000 cases in all awaiting the Council's pleasure since 1905.

It had not been my intention to bring two issues forward at the same time. The 50,000 cases were to my mind sufficient to go on with, but now that fresh issues have been raised I consider it my duty to extend the scope of the matter complained of, and to say that, whilst in the first instance the inattention is largely due to the Council not giving the Building Act Department a sufficient staff and proper encouragement, in the fresh matter the inattention is largely due to what I consider the Council's policy of not allowing the district surveyors to undertake certain duties which they are quite competent to carry out, and which should largely have been carried out by them under the Act.

Complaint has further been made that when I said the 50,000 cases could be dealt with in the course of the next five years, this would be impossible, and would be inflicting hardships. I wish emphatically to state that it is quite practicable and feasible to attend to the 50,000 cases with a suitable and well-staffed organisation in the course of five years, and further that the district surveyors of their fifty districts can easily attend to the majority of the 44,000 cases newly referred to without putting much, if any, strain upon the County Council's Building Act Department. It is largely a matter of the earnestness of the Council, of staffing and of organisation, and of further allowing the district surveyors to do their duty without undue interference.

Some other critics have suggested that if all these structural alterations were carried out within the next five years there would be a great disorganisation in the building world of the metropolis. These critics are entirely mistaken. The amount of alteration in quantity and value is comparatively small compared with the quantity and value of building work done during any active building period of similar length between 1880 and 1910.

I regret again to have to occupy such valuable space in putting forward these facts and making complaints regarding the sluggishness of the London County Council in respect to the administration of the Building Act Amendment Act of 1905, but this question of fire protection is one affecting such a large number of buildings and such a large number of lives that it is impossible to let the present state of affairs rest.

The London County Council, in its corporate capacity, must be made to realise its duties and grave responsibilities as to safety of life in our metropolis.—Yours truly,

EDWIN O. SACHS.

Offices of the British Fire Prevention Committee.

8 Waterloo Place, Pall Mall, S.W.:

December 3, 1912.

THE Worcester Education Council last week decided on the selection of a site in the Arboretum in the centre of the town for the proposed school with accommodation for 750 children.

The Architect.

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FORTHCOMING EVENTS.

Monday, December 16.

- Royal Institute of British Architects: Paper entitled "The Walls of Visby, Gotland," by Mr. Horace Porter, M.A., A.R.I.B.A., at 8 p.m.
- Liverpool Architectural Society: Paper entitled "Small Country Houses of To-day" by Mr. Lawrence Weaver, F.S.A., Hon. A.R.I.B.A., at 6 p.m.
- Surveyors' Institution: Paper entitled "The Value and Marketing of English Timber" by Mr. M. C. Duchesne at 5 p.m.

Tuesday, December 17.

- Institution of Civil Engineers: Discussion on paper entitled "The Generation and Distribution of Producer-Gas in South Staffordshire," at 8 p.m.

Wednesday, December 18.

- Edinburgh Architectural Society: Paper entitled "Some Small Country Houses of To-day" by Mr. Lawrence Weaver, F.S.A., Hon. A.R.I.B.A., at 8 p.m.
- Nottingham Architectural Society: Paper entitled "Examples of Pictorial Architecture and Miscellaneous Subjects" by Mr. Thomas Wright, F.R.P.S., at 8 p.m.
- Royal Society of Arts: Paper entitled "The Pictorial Possibilities of Work" by Mr. Joseph Pennell at 8 p.m.

STAINED GLASS COLLECTING.

A GOOD many architects' offices contain fragments of old stained glass which has been rescued from complete destruction for the sake of its interest as an exemplar of ancient art and craft, and the circumstances of architectural practice frequently offer opportunity for picking up old bits; but it seems that in the perpetual seeking for new fields of bric-à-brac, collectors have begun to turn their attention to old stained glass from the point of view of possession rather than appreciation, from which arises the circumstance that the age, genuineness and rarity of the specimen makes its value for them rather than its evidence of artistic endeavour or craftsmanlike skill.

The collection of stained glass has indeed become so far a recognised branch of connoisseurship, that it is worth while for men to exercise their skill in the forgery of quasi-antique glass.

It is unfortunately true that when a particular class of objects becomes a sufficiently fashionable vogue the forger enters the field to provide spurious specimens for the ardent collector possessed of cash and deficient in knowledge.

Those therefore who propose to commence collecting old stained glass with any view of making a profit or even of enjoying the pleasure of possession at the proper price must devote attention to learning the special features, marks and characteristics which distinguish the productions of different ages, the omission of which may frequently lead to the detection of a forgery.

We cannot say that their absence will inevitably and always distinguish the spurious from the genuine, because the forger of sham antiques usually knows his subject and his work, and there is no reason why the twentieth-century imitator of fifteenth-century work may not approach very closely to the productions of his predecessor, if he is prepared to take sufficient trouble, and give sufficient time to his imitation. Even the effects of age can be simulated to a close approximation of the genuine. Fortunately for the collector who knows his subject the forger does not always find it sufficiently profitable to make his fake complete.

Sometimes, however, the zeal of the modern collector raises the price to a level far above the intrinsic value of the specimen, so that it is worth the forger's while to spend an abnormal amount of time and trouble in producing something so closely approximating to the genuine antique as to deceive even the expert.

Perhaps the soundest advice that can be given to the

beginner in collecting stained glass, and, indeed, one might almost say any specialty, is, first of all, never buy anything which is high priced; secondly, never buy a complete and perfect specimen. The beginner should content himself with broken fragments and low priced specimens; he is less likely to have forgeries foisted upon him, and if he is victimised his monetary loss is reduced to a minimum.

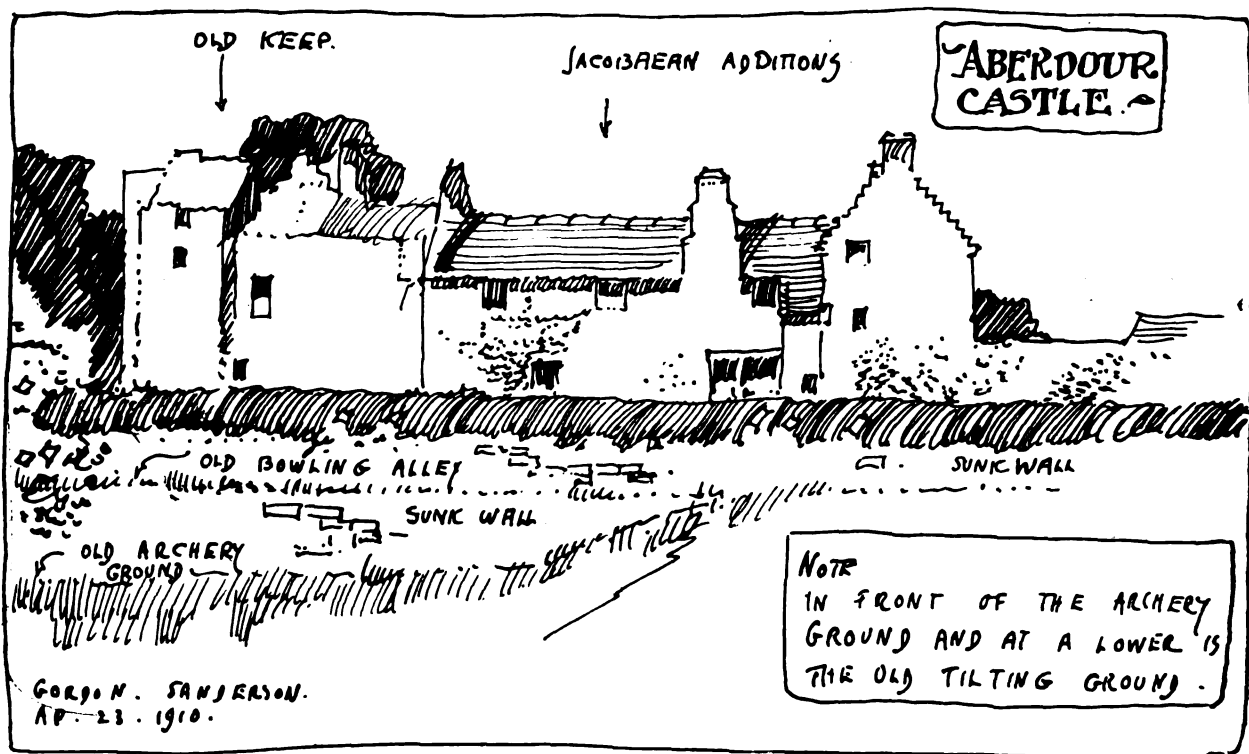
There is, of course, always the chance of being landed with spurious imitations, but that is part of the game of collecting. The collector pits his wits against those of the fraudulent dealer and he cannot always expect to come off victor.

As an assistance to the collector in his early essays, Mr. Maurice Drake's "History of English Glass Painting," would be of considerable value.* The name of this book is rather a misnomer, as the history of English glass is rather an introduction to special chapters and illustrations of Swiss glass; indeed, a very considerable portion of the plates, which are printed in colours, is devoted to Continental examples of glass painting.

Although, however, we must regard this history of English glass painting as an introduction to Swiss work, we nevertheless have a very good account of English stained glass written from the point of view of technique, the professed object of Mr. Drake's work being to assist the collector to acquire that elementary knowledge which will enable him "to buy with intelligence, to know the approximate date of this or that dirty piece of glass that may come in his way, to recognise it as genuine or spurious, and further to advise what he shall do with it once it is in his possession."

It is scarcely likely that the collector will come across many pieces of twelfth or thirteenth-century glass, but it is well that he should know what are the peculiarities of these early periods, so that if by chance a treasure should come his way he may be able to recognise it. The classic authority on early art is the manuscript of the Monk Theophilus, entitled *Diversarum Artium Schedula*, from which we may learn that what we now call sheet glass was one of the methods of manufacture then employed, and although he does not mention it we know that crown glass was also made. The striae of this glass are deeply marked, frequent, parallel and nearly always follow the segment of a circle. The thickness and lack of

* *A History of English Glass Painting, with some remarks upon the Swiss glass miniatures of the sixteenth and seventeenth centuries.* By Maurice Drake. Illustrated by 38 Plates from drawings by Wilfred Drake (London: T. Werner Laurie, Ltd. 42s. net.)



transparency is a characteristic of this glass, while the condition of the surface will be either entirely free from corrosion, or pitted with large well marked circular holes, or evenly rotted and covered all over with chalky patina. Another important mark of early glass is the presence of coarsely chipped edges, for it was only in the sixteenth century that the diamond came to be used for glass cutting. There are other characteristics of very early glass as regards its design and colouring which are indicative and will be recognised by the collector after he has had experience, but these are more easily imitated by the forger.

The glass of the fourteenth century has several criteria which distinguish it from earlier work. The first appearance of yellow stain and abrasion, the first use of white glass for flesh, generally with hair stained yellow, the first appearance of heraldry, and the first employment of stippled shadows.

The glass of the fourteenth century was usually of excellent quality and is often entirely free from corrosion or patina. When corrosion does appear it generally takes the form of scattered pits, smaller than but as clearly defined in form as those of the thirteenth century. The striae and minor irregularities gradually disappeared from the surface of the glass in the improvement of manufacture, for by this time glass-painting and glass-making had become separate crafts.

There are also as before distinctive differences of drawing and colouring in this century, and in the latter half, particularly, the predominance of yellow due to the delight with which the discovery of silver stain was received is a distinguishing characteristic.

The painted glass of the Perpendicular period may be recognised by its relative thinness, compared with early glass; its colour quality, which, if white, should be nearly pure, if pot metal showing the prevalence of secondary or tertiary colours, more particularly in the purplish tone which begins to invade the blue, whilst the ruby often has a tendency towards a brown or pinkish shade. Especially should be noted the smoothness of the glass surface, the reaminess and imperfections of the fourteenth century having almost disappeared. The corrosion holes are smaller and less circular than in early glass and not so frequent as in later examples. Again we have also a characteristic difference in drawing and composition. The prevalence of white glass, the occurrence of secondary or tertiary colours, the use of the

quarry and the characteristic silvery white canopies are all distinctive.

In Renaissance work of the sixteenth century we find the first appearance of enamel colour and the first employment of the diamond for cutting, and the lead vice for forming cameos. There is a great increase in the practices of abrasion, insertion, and annealing. The glass also is thinner and smoother and approximates in weight and texture to common modern 15 or 21 oz. sheet. In treatment large pictorial subjects extending through mullions and tracery become favourite. There is in short an attempt at pictorial representation which sometimes runs counter to the hard and fast conditions of glass designing.

Far heavier painting is used than in any of the Gothic styles. Matt is laid and stippled dry in a level coat, from which the lights are afterwards wiped out with a stiff hogshair brush. These tendencies led on to the decadence of stained glass in the seventeenth-century work and its supersession by painted glass.

This development was naturally enough accompanied by a corresponding change in the manufacture of the glass; pot-metals are pale and poor and are generally crown glass, whilst the white is almost invariably sheet and of better quality, particularly in the latter half of the century.

These are some of the points which form the A B C of the glass collector's education and are explained in full by Mr. Drake, together with many other features characteristic of various periods which we have not sufficient room to include. Some considerable knowledge of heraldry for example is almost a necessity for the collector.

We noted earlier that Mr. Drake had devoted a considerable portion of his book to the description and illustration of Swiss stained glass, and the reasons that he assigns for so doing are that "the essential subject of the book is treated primarily for the information of collectors of old stained glass, that Swiss glass is held in the highest possible esteem by all such collectors, and, finally, that although the works of the Swiss glass-painters of the sixteenth and seventeenth centuries have been exhaustively reviewed on the Continent, where a large number of French and German writers have sedulously devoted themselves to their study, no English book upon Swiss glass seems to be in existence."

As we look at Mr. Drake's illustrations of Swiss work, we recognise that it is but a local school of German glass-

painting, and might very well have been produced in Nuremberg or any other centre of German art craftsmanship.

NOTES AND COMMENTS.

THE report of the Select Committee on the various Ancient Monuments Protection Bills now before Parliament recommending that the Ancient Monuments Protection Bill first introduced into the House of Lords should be allowed to proceed has been published as a Blue Book. The Committee have examined several witnesses, including Mr. C. R. Peers, Sir R. Anderson, Mr. T. Ross, Mr. Reginald Blomfield, A.R.A., and Mr. Thackeray Turner.

The Committee made several recommendations with a view to improving and speeding up the provisions of the Bill that they recommend for adoption. Thus they advise that a preservation order should be allowed to lie for so many days on the table of both Houses of Parliament to be confirmed, unless within that time an address to his Majesty against that order has been presented by either House; also that in case of emergency, especially when Parliament is not sitting, provision should be made that prompt action should be taken, either by the owner with the consent of the Commissioners, or by the Commissioners themselves, to save a monument in imminent danger where delay might be disastrous.

The Committee think that in the case of an ancient monument declared by the Commissioners of Works, on the recommendation of the advisory board, to be a monument of national importance, and after the opportunity has been given to the owner to be heard, the consent of the Commissioners of Works should be obtained before any structural alterations are undertaken, which consent should not be unreasonably withheld, and such monuments should be exempt from probate and death duties.

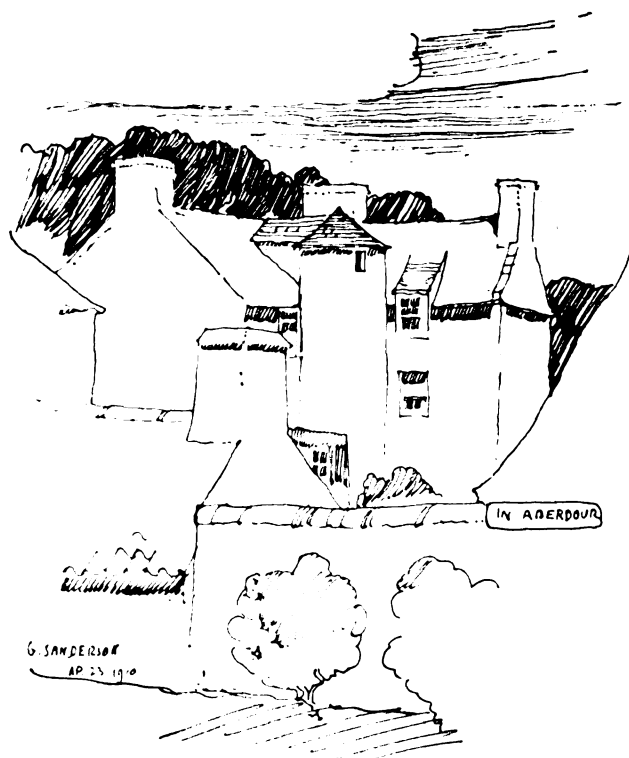
The Committee do not think it necessary to prevent the sale of ancient monuments provided that they are secured from destruction, damage, neglect, or injudicious treatment.

With regard to ecclesiastical buildings, the Committee suggest that in a case where a faculty is asked for a public advertisement in the principal papers circulating in the diocese should be published, with a notice that the plans might be examined in the Diocesan Chancery, and a reasonable interval should be allowed within which criticisms or suggestions might be made to the Chancellor. They think further that whenever serious criticisms are made the Chancellor should secure the advice of a small committee, say, of three competent architects of repute, and that in granting the faculty due regard should be had to their report, such report and the final form of faculty being made public.

It is recommended that the Commissioners of Works and the advisory board should be assisted by a sufficient number of inspectors of ancient monuments to visit periodically and to report to the Commissioners on the condition of ancient monuments in their district, and a strong opinion was expressed by the Committee that a special department in the Office of Works should be organised to deal with the work that must necessarily fall on such Office under the Bill.

The battle in Manchester over the Piccadilly site is still continuing, and in the inquiry now proceeding several leading architects have recently given evidence. Mr. John Brooke, as President of the Manchester Society of Architects, expressed the general view of the Society that it was desirable that an Art Gallery and Free Library should be built on the Piccadilly site.

He expressed his personal opinion that the present Exchange could not be satisfactorily extended, and he also objected to the extension of the present Art Gallery. He thus seems to us to put the whole question very clearly. Manchester needs a new Art Gallery and Library; it also needs a new Exchange building. Neither of these necessities can be satisfactorily provided by an extension to,



or alteration of, either the present Art Gallery or the present Exchange, therefore sites must be found for both new buildings.

The Piccadilly site is suitable for either. It remains, therefore, for the Corporation finally to make up its mind which of the two new buildings shall go on the Piccadilly site, and what new site can be provided for the other. Mr. Brooke suggests that the land bounded by Market Street, Corporation Street, Cannon Street, and New Brown Street would provide a suitable site for the new Exchange.

The restoration of the roof of Glasgow Cathedral is now practically completed, and it is intended that the new building shall be rededicated at a special service on Sunday, December 22. We have in a former number given a description of the work carried out to the roof, which has been the principal part of the recent works of restoration. The stained-glass windows have received attention, and although of a bad period, have been to some extent improved from the practical consideration of lighting, although the cleaning has removed the merciful toning of dirt.

The Flintshire Education Committee has been discussing the ancient problem of the acceptance of the lowest tender. In some recent instances in this Authority the lowest tenderer has been set aside in favour of a local man, and the point of discussion has been whether it is more equitable to save the ratepayers the additional cost by accepting the lowest tender or to assist the ratepayers by giving the work to a local man.

The crux of the question, of course, lies in the fact that the additional cost affects the whole of the ratepayers, whilst only a section derive a benefit from the retention of money in the district, not a small section, however, as in our modern complex system of civilisation it is difficult to say how far through its ramifications extends the expenditure of any given sum. The solution of the problem will probably depend upon the magnitude of the saving as compared with the total expenditure. In the particular instance which the committee were discussing, the amount of the contract was £1,080, the accepted tender being £12 above the lowest. We should think that in this instance the community would benefit more by the expenditure of £1,080 amongst themselves than by a saving of £12. Nevertheless, the committee passed a resolution "that it be an instruction to all sub-committees in the case of contract work to recommend for acceptance

the lowest of the tenders received unless there is good reason for believing that the individual or firm giving such tender will not be able to carry out the work so satisfactorily."

An important report by the Education Committee of the London County Council has been presented for the consideration of that body, on the training and employment of boys in the building trades in London. This report is the result of the Committee's consideration of (1) an apprenticeship scheme suggested by the Institute of Builders; (2) a report of the London Association of Master Decorators; (3) proposals for the reorganisation of the building department in the Northern Polytechnic; (4) a scheme for a building trades school at Hammer-smith; (5) the formation of consultative committees in connection with the building trades. The Committee has had in view two aspects of the problem: (1) The question of the methods by which the best artisans can be trained; (2) the question of training the ordinary hands; and the present report deals with the former of these questions, that is, the training of the better class artisans, those who ultimately become the best workmen and foremen, possibly even managers. Stated shortly, the scheme which the Education Committee now propose to ask the Council to approve provides for (1) the award of ten additional scholarships a year at the Brixton School of Building; (2) the transfer to the Northern Polytechnic of the building classes of the Hackney Institute, together with the ten scholarships attached to these classes; the award of ten additional scholarships in engineering at the Hackney Institute in connection with the accommodation vacated by the building classes; the development of a trade school in the building department at the Northern Polytechnic to provide in the first year for thirty pupils, comprising twenty-five scholarship holders (including ten transferred from Hackney) and five fee-paying pupils, sixty in the second year, and ninety in the third year; and (3) the erection of a new art school in West London, the accommodation at present used by that school to be adapted for the purpose of a building trade school to which is also to be transferred the building trade classes at present held at the Paddington Technical Institute, such transfer being accompanied by the award of further scholarships each year at the new school. Application has also been made by the governors of the Northern Polytechnic for a building grant of £10,000 for the extension, but consideration of this matter has been adjourned by the Education Committee, and we understand that the necessity for the extension is not likely to occur in the immediate future.

THE ARCHITECT'S STUDENTS' SKETCHING AND MEASURING CLUB.

THE study of wrought ironwork is one that ought to receive careful attention from every young architect, since it is impossible to design ironwork without knowing how it is constructed, what are the possibilities afforded, and the limitations imposed by the craftsman's handiwork which must be considered by the designer. A knowledge of these things can be very largely acquired by an intelligent study of the work of the past, which will be all the more fruitful if it has been preceded by observation of craftsmen at work. The design of wrought ironwork is not merely the arrangement of straight and curved lines with or without foliage applied in a pretty pattern or elevation. The section of every piece of metal should be considered together with the amount of work that can be done whilst it is hot, the number of times it must be heated before it is finished, and the method by which the various pieces are fastened to each other.

"Chelt" has drawn a balcony from Versailles of early eighteenth-century date now in the Victoria and Albert Museum, a very elaborate and intricate piece of work, almost a *tour de force*. A complete study should embrace many more details than are included on "Chelt's" drawing, which, however, is good as far as it goes.

Mr. G. C. Styles also has measured a French balcony front from Paris now in the Victoria and Albert Museum, not quite so intricate as "Chelt's" but really better in design. Mr. Styles' drawing is also short of details, and it is not quite apparent how some of the construction is managed.

"Alpha" has found an excellent piece of English work in the north choir aisle of Beverley Minster, and has drawn it excellently, with a number of notes indicating the sizes of parts that make the work understandable.

"Plato" has selected a piece of the magnificent choir screen at St. Paul's Cathedral, the elevation of which is well drawn but lacks a sufficiency of detail to make it completely informative. It is not quite clear, for example, what happens when a $\frac{3}{4}$ in. by $\frac{3}{4}$ in. bar meets a $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in. "Plato's" drawing, read literally, indicates that they are flush on one face, but this can hardly be correct. Still more puzzling is the manner in which a 1 in. by 1 in. bar stands on a $\frac{3}{4}$ in. by $\frac{3}{4}$ in.

We award prizes of half a guinea each to "Chelt," Mr. G. C. Styles, "Alpha," and "Plato."

NOTES ON BOOKS.

"The Everyday Uses of Portland Cement." Second Edition, 1912. (London: The Associated Portland Cement Manufacturers (1910), Ltd. Paper covers, 1s. 6d. net; stiff covers, 2s. 6d. net.)

The many uses to which Portland Cement and Portland Cement Concrete can be put are well set forth in this handbook published by the Associated Portland Cement Manufacturers (1900), Ltd., and even those of us who have a general acquaintance with concrete and its practical uses may learn something from the detailed descriptions and illustrations which are included. For example, the difficult question of painting cement and concrete surfaces is clearly and frankly explained, and so also is the trouble of efflorescence and its remedy. A series of illustrations of various classes of work in which concrete, reinforced or otherwise, has been used, contains both useful and interesting information.

"The Law Relating to Highways." Second Edition. By H. Hampton Copnall, solicitor, clerk to the Notts County Council. (London: Charles Knight & Co.)

The first edition of this work was published in 1905, and the fact that a second edition has become necessary shows that it met a want and that a book on the Law of Highways was needed.

With appendix and index we have in this new edition a volume of over 750 pages, and about 80 pages of statutes and cases cited. A large number of cases have been decided since 1905. These and many practical points on the administration of Highway Law are considered and determined.

The book has been largely rewritten, and the introduction of more headlines and the breaking-up of the chapters into concise paragraphs on particular subjects will be found an improvement and render the volume much more useful.

It is a book of great help to all interested in the administration of the law relating to Highways, and should find a place on the book-shelf of officials and laymen who take an interest in this particular subject.

"Photographic Lenses." A simple treatise by Conrad Beck and Herbert Andrews. Seventh edition, completely revised with index. (London: R. & J. Beck, Ltd. 1s.)

Everybody nowadays indulges more or less in photography, and whether the camera user is content to follow the injunction, "You press the button, we do the rest," or aims at the highest level of pictorial photography and a honoured place in the annual exhibition of the Royal Photographic Society, one and all will find it desirable to

understand the nature of the lenses that are used in modern cameras with their capabilities and limitations. Whatever form of camera the photographer is using, he will learn by perusal of the cheap but thorough little book before us that he must not expect one lens to do everything; that if he has a lens of general utility, it has only been designed and manufactured by a compromise between incompatible qualities. Having read and carefully studied this book he will be able to decide what particular kind of lens is most suitable to his requirements, what qualities he is desirous of retaining, and with what he is prepared to dispense.

The publishers, being makers of lenses, it is only natural that their productions are prominently displayed, but even though a book of this extent may be regarded in some sense as an advertising medium, there is so much accurate and full information that it is necessary for the photographic reader to possess the book in order to obtain the full value of his lens.

"Practical Sewerage and Sewage Disposal." By H. C. H. Shenton, F.S.E., M.I.Mun.E., M.R.San.I. (London: S. Edgecumbe Rogers. 3s. 6d. net.)

It can hardly be expected that a small octavo volume of 148 pages gives sufficient space for all that might be said on the subject of sewage disposal, but we have here a useful introduction to the general subject, which rather tells us what can be done in the way of sewage disposal than how it is to be done.

ROYAL ACADEMY SCHOOLS' PRIZE DISTRIBUTION.

THE annual distribution of prizes to the students in the Royal Academy schools took place on Tuesday evening last, the 10th inst., before the usual large gathering of Royal Academicians, Associates, and students and their friends.

Sir E. J. Poynter, P.R.A., gave the following short address before announcing the awards:—

It is with great regret that the Royal Academicians have awarded second prizes only for the Paintings from the Head and the Paintings from the Life. But they felt that they could not do otherwise, in view of the very inferior quality of these works this year. We put this down, however, to the fact that these works were done under the new conditions in the Schools, which are not yet fully in working order, and in the case of the Heads to the exceptionally dark weather when these paintings were executed. On the other hand, we have nothing but praise for the paintings of still life, and the merits of these hold out hope that when the students who have done them pass into the Upper School they will acquit themselves equally well before the living model. The Creswick Prize works are also exceptionally good, the best, in fact, as far as I remember, we have had on these walls. They show evidence of careful study and love of nature, and just what such work should be. The members thought the competition was so good that a second prize of £5 has been awarded. I am also glad to point out that the average of the "Designs for the Decoration of a portion of a Public Building" are also above the average.

The complete list of prizes and prize winners is as follows:—

Landscape Painting.—"In an Orchard." Creswick Prize (£25) and silver medal, Evelyn Muriel Young; extra prize (£5), Una Hook.

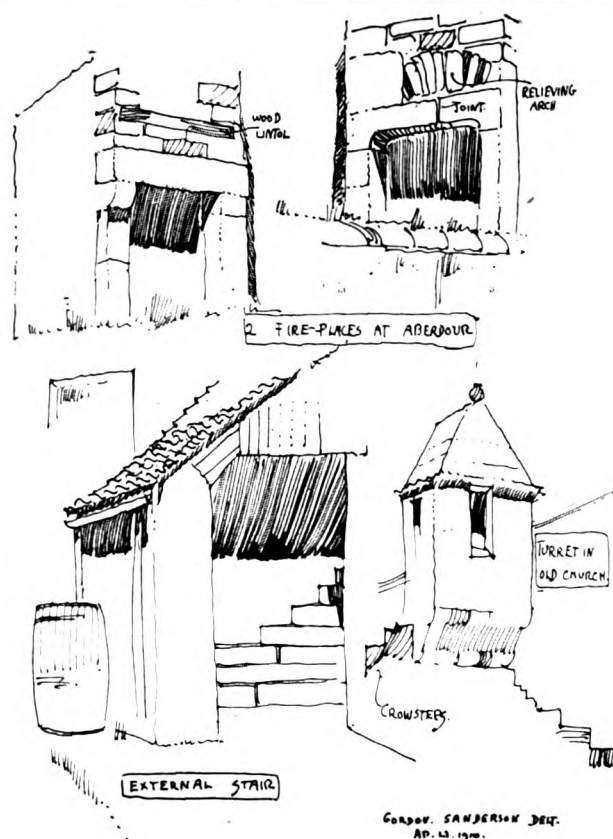
Design for the Decoration of a Portion of a Public Building.—"Romans Disembarking Slaves." First prize (£30) and silver medal, James Williams; second prize (£10) and bronze medal, Gerald Leslie Brockhurst.

Design in Monochrome for a Figure Picture.—"Joseph's Brethren bringing the Coat of Many Colours to Jacob," Genesis, chapter xxxvii. 31-32. Armitage prizes, first (£30) and silver medal, Horace Edward Quick; second prize (£10) and bronze medal, Hilda Marion Hechle.

Composition in Colour.—Prize (£10) and silver medal, Florence Margaret Walden.

Cartoon of a Draped Figure.—"An Orator": to be treated classically. Prize (£25) and silver medal, not awarded.

Two Paintings of a Figure from the Life.—First prize (£10) and silver medal, not awarded; second prize, bronze medal, Robert John Swan.



Two Paintings of a Head from the Life.—First prize (£5) and silver medal, not awarded; second prize, bronze medal, Florence Margaret Walden.

Perspective Drawing in Outline (open to painters and sculptors only).—"The Bromley Palace Room in the Victoria and Albert Museum." Prize (£5) and silver medal, no competition.

Set of Four Drawings of a Figure from the Life.—First prize (£15) and silver medal, Horace Edward Quick; second prize (£10) and bronze medal, Hilary F. Cleveland Skinner.

Set of Three Studies of Drapery.—Silver medal, Hilda Marion Hechle.

Drawing from the Antique.—Prize (£5) and silver medal, Nancy Wordsworth Arnold.

Painting from Still Life.—Prize (£5) and silver medal, Sylvia Ellen Gaunlett.

Model of a Design.—"Sisera and Jael." Judges, chapter iv. 17-21. First prize (£30) and silver medal, Alfred Henry Wilkinson; second prize (£10) and bronze medal, Joseph Herman Cawthra.

Two Models of a Bust from the Life.—First prize, silver medal, not awarded; second prize, bronze medal, Alfred Henry Wilkinson.

Model from the Antique.—Prize (£5) and silver medal, Allen Howes.

Design containing Figure and Ornament.—"Gathering Grapes": the vine to be treated ornamentally. Prize (£5) and silver medal, not awarded.

Set of Three Models of a Figure from the Life.—First prize (£15) and silver medal, Allen Howes; second prize (£10) and bronze medal, Peter Induni.

Design in Architecture.—"An entirely detached Town Residence for a Nobleman in a Capital City overlooking a Public Park on its West Side." Travelling Studentship (England), £60, tenable for one year, Oliver Frederick Savage.

Set of Architectural Drawings.—First prize, silver medal, Augustus Gaffett Bryett.

An Architectural Design.—"The West Front of St. Martin's-in-the-Fields, including the Tower and one Return Bay." Prize (£20) and silver medal, Chas. Frederick Butt.

An Architectural Design (First Term Students only).—First prize (£15) and silver medal, Geoffrey P. Agnew Fildes; second prize (£10) and bronze medal, Wm. Henry Hamlyn.

Perspective Drawing in Outline (open to Architects only).—"The East End of St. Martin's-in-the-Fields." Silver medal, Walter Llewellyn Clark.

Original Composition in Ornament (open to Architects only).—Prize (£5) and silver medal, Harold Thomas B. Barnard.

Architectural Design with Coloured Decoration.—"One Bay of a Hall for a City Company or Guild." £5 and silver medal, Augustus Gaffett Bryett.

Landseer Scholarships in Painting and Sculpture, of £40 a year each, tenable for two years, have been awarded—in Painting to Horace E. Quick and Douglas S. Gray; in Sculpture to Alexander Stiles and Allen E. Howes.

THE ARCHITECTURAL ASSOCIATION.

A COMBINED ordinary general meeting of the Architectural Association with the Art Workers' Guild was held on Monday, the 9th inst., at Tufton Street, Westminster, S.W., Mr. Gerald C. Horsley, president, in the chair.

Mr. Horsley made a few introductory remarks after the formal preliminary business had been completed. He was, he said, very pleased to welcome those members of the Art Workers' Guild who had accepted the invitation of the Association to be present that evening. Some of the members might not perhaps know much about the Guild, though it was a very famous body. The society comprised within its ranks artists following different crafts—there were something like thirty represented. That was the chief object of the founders when the Guild was established about twenty-eight years ago. He (Mr. Horsley) felt proud of being able to say that he had been one of these founders. Their object was to afford some opportunity for men practising various crafts to meet together. Such opportunities had previously been very few, and craftsmen were not well organised. It had proved a very successful society, and was at the present moment in a most flourishing condition. The members had reaped the utmost advantages from becoming acquainted with crafts other than their own. He himself had had the honour of acting as honorary secretary for about eighteen or more years, and he looked back on those years with the deepest pleasure. The subject for discussion that evening had been selected as being one of peculiar interest both to their guests and to themselves, and also as affording ground for a wide diversity of views.

The following papers were then presented on

The Practice of the Crafts in Modern Building.

MR. F. C. EDEN.

A few years ago we used to be told that the practice of the crafts was the whole duty of architects. Since then our mentors have moved with the times; and now engineering, "the noblest architectural result of the Renaissance," is said to be the one thing needful. The earlier theory was that the workman—craftsman they liked to call him: presumably in those days he must have used a folkwain instead of an omnibus to get to his job—that the workman was to be fancy free in manipulating his material, and by a flourish of his tools, as by a sort of peaceful picketing, to warn off the architect from ignorant interference with his self-expression.

Architects have usually been willing to learn—at any rate, up to a certain age—and though they could not agree to leave the carpenter and mason to work their own sweet will entirely untrammelled, they came to recognise that the touch of nature and nature's material is worth a deal of office drudgery; so that nowadays it might be hard to find one to show the fine impartiality attributed to one of the Gothic Revivalists, and mark his design for a reredos as being "for oak or alabaster." And now that we have gone so far with the critics they pounce upon us, dragging with them a new bogey dressed up as an engineer, and affirm that he is the only real artist, in whose mathematical formulæ the secret of true architecture lies hid. Give the carpenter a saw and a log, you need only wait to get a fine hammer-beam roof; just as the co-operation of mallet, marble and Michel Angelo once produced a *David*. That was the old arts and crafts theory; the new one is this: Provide an engineer with a book of tables and formulæ, and a thousand tons of steel cut to stock sizes, and the splendid practicality of the result is the only form of architectural beauty possible in the twentieth century.

The author must own to a scruple about subscribing to either of these theories. They seem to have originated in those uncomfortable shades where cranks and faddists do peep and mutter, and to take but small account, the one of things as they are and the other of things as they should be.

In any case, the result is to queer the pitch of the poor architect. He may still, perhaps, have his use if he keeps abreast of the latest inventions whereby civilised man hopes

to become daily a more and more comfortable animal, and if he be clever and unscrupulous enough to build a box for £150 to keep the uncivilised in. Whatever theories may be afloat, it seems absurd to suppose that fine architecture can exist without right practice of the crafts, even the humblest of them.

For example, the reason why the earlier works of that great master who has been lately taken from us do not give us the pleasure which we feel they should is surely this: That at the time they were built the right sort of brick and tile was not to be got. This trade (of the brick and tile maker) is perhaps the one in which the most real improvement has taken place, chiefly by the substitution of hand work for machinery, while carpentry continues to deteriorate owing to the increasing use of machinery in the trade. Where could one have an oak roof-truss, for example, properly made and framed in London without machinery and without iron?

The condition of the trade of the house-painter can hardly be said to be satisfactory. The most we dare to expect from him is that he lay a sufficient number of coats of good lead paint, and match a sample tint with fair accuracy; that he work with neatness, and leave no smears on the window panes. Once the author had to import an Italian house-painter from Florence, a man who worked at what was presumably the usual rate for him, viz. 10d. an hour. One of the things he was set to do was to decorate in the Poccetti manner a large coved cornice broken into by lunettes. When he started upon the first section—there were about seventy spaces to be filled—he asked if they could be varied in order to avoid monotony. And then he set to work and made a different but balanced design for every compartment. His method was to rough out his design on the plaster with charcoal—a matter of about five minutes—and then paint it in without more ado.

The designs might not have always been in the purest taste—the Italian, like other workmen, has become vulgarised by the general trend which we call progress; but he still has a sort of mediæval facility, coupled with an innate sense of fitness, which the British house-painter has long ago lost.

He, as already said, can match a tint; but even there his method is all wrong. He will mix you a mess of paint, certainly, but why is the result so unpleasant when it is upon the wall? Simply because the only way to get a beautiful effect of colour is by a glaze which allows the under colour to strike through. If you come across a piece of eighteenth-century panelling which has escaped repainting—say, where a cupboard has been fixed across a recess—the chances are that you will find an example of this method. The French way is technically better than ours; the difference consists in the way the first coat is laid over the priming. For this the paint is made into a thickish paste with oil and driers without turpentine, and this is spread not with a brush but with a broad spatula and well pressed home. It takes about a fortnight to dry, and is followed by three more coats laid in the usual way, the only difference being that the brushes used to have much longer and softer hair than ours. Stippling is not used, and the finished surface is very silky and pleasant.

For decorative objects, such as frames, reredoses, images and screens for churches, and so forth, the following is an excellent process: Lay a gesso ground over the whole surface, whether wood or stone, and upon this two coats of colour ground in spirit and mixed with spirit varnish. Then a coat of spirit varnish only; and, finally, and this is most important, the glazing or toning coat of colour, wax and turpentine. This method has the advantage that the toning can be promptly removed in whole or in part when any modification or correction is required by a rag dipped in turps; and also that it produces with rubbing that semi-polished surface so sympathetic to sight and touch which wax alone can give. Tempera colour can be used over the gesso if preferred instead of the spirit medium, and can be burnished like gilding when a glossy surface is required.

Gilding is a thing of which you can scarcely have too much if it is done in the right way, or too little if it is done in the wrong. Oil gilding, our usual method, is at best a makeshift, but even here the English gilder goes astray. He is prone to lay his size much too thick, and lay the gilding gold leaf while it is still too soft and sticky. A gesso ground should always be used, not paint, still less bare wood; the effect of the grain grinning through being very crude and amateurish. The result of wrong methods is that the gold quickly loses its brilliancy, and turns to a shabby, dirty yellow. Where durability and richness of effect are aimed at, burnished gilding is the only way. The gesso ground is covered with a thin layer of bole; this is wetted, the gold

leaf laid on it, and burnished when dry. If the result is too bright and metallic for the purpose in hand, the glitter can always be subdued by use of the wax toning recommended above.

Reverting for one moment to the relationship of the crafts to architecture, a recent text-book says: "We are always agonising about design, but design, as Rodin has said, is as nothing compared to workmanship." One is not surprised at Rodin disparaging design, but only that an architect should quote his words with approval. The whole misconception of the position could not be better expressed. It is our old friend the fallacy of false opposition. The crafts are the ingredients of which architecture is compounded. Design is to a building what the cook is to a dinner. If the fish be stale it does not matter how nicely it is served, just as the choicest of ingredients will be spoilt by unskilful cooking. Each is necessary as the other to the success of the result, and each is helpless without the co-operation of the other.

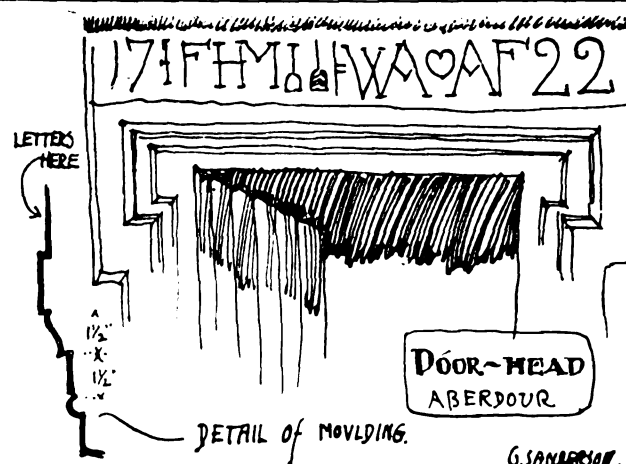
MR. F. W. TROUP.

"The Crafts" referred to in the title presumably mean what is often called the *artistic crafts* as distinguished from what are generally known as the *trades* connected with building. Every trade, however, is a craft, no matter how crudely commercial it appears at times to be. Indeed, one of the best examples of a modern craft is to be found in the practice of ferro-concrete. Although this seems to require the most abstruse calculation of its strains and stresses, and is usually regarded as an extreme example of the useful inroads of the engineer on the province of the architect, it is none the less absolutely dependent upon the most careful craftsmanship for its execution. Ferro-concrete appears to be the modern analogue of a typical mediæval craft. So much is it a true craft that many engineers fight shy of it, and declare that "they know where they are with steel pure and simple, but this mixture of steel and concrete is a hybrid of uncertain strength, and who can tell how long it will last?" Its devotees have to admit that it is a young craft, and there may still be about it some mysteries not fully gauged; but it must be remembered that even the arch in its early stages must have given masons a good deal of trouble before they got the hang of all its possibilities when properly harnessed, and its tricks if used without full knowledge and proper control.

One may here enter a protest against the assumption that there is no longer in these trades any true craftsmanship. On the contrary, there is an immense deal of traditional craftsmanship in all the ordinary building trades. The real trouble is that the modern workman attempts to hide all the best of it beneath a skin of geometric precision. Many architects, recognising this, have attempted to overcome it by using rough bricks, wide joints in masonry, and by other means in other materials have tried to get some semblance of the fling and go that seemed to come unsought in the work of the mediæval craftsman. But this is only a makeshift. Emanating from the architect, whatever its merits may be, it is more of an artificiality than it ought to be, or would be if it came direct from the craftsman himself. These devices of the earnest and conscientious architect are, however, not only easily imitated but easily exaggerated by those who do not always think for themselves and are inclined to overdo "the very latest thing out." Moreover, it is not a solution of the craft problem, although it may possibly point to and perhaps help in arriving at some cure more radical and permanent.

Whilst it is a little difficult to define in general terms the artistic crafts, it will be pretty generally accepted that carving, modelled plaster, decorative painting and stained glass all come under that head. Most of these crafts are, indeed, usually practised by men with a special training, but the materials are the same for the crafts as for the trades—the carver decorates the joiner's or carpenter's work, the modeller the plasterer's work, stained glass is only glorified glazing, and so on. So that we must recognise at once that the work done in what is known as the artistic crafts is no more than the ornamental part of the commonplace building trades.

It requires no very recondite reasoning to arrive at this somewhat obvious conclusion, but it appears as if it were forgotten by the craftsmen themselves. They too often dissociate themselves from "the trade" of their craft. They learn to carve, and forget to learn joinery; they learn to model, and know little or nothing of plain plasterwork. If the craftsman worked more with the artisans of the corresponding trade, regarded himself as a superior plasterer,



G. SANDERSON.
APR. 13. 1910.

bricklayer, or smith, and not merely the man to whom was apportioned the duty or privilege of doing the ornamental scraps and finishings, it would go some way towards overcoming the difficulties and dangers into which architects fall when they try to direct in detail the manner in which materials shall be finished in the buildings they have to superintend. The stone carver would be a mason rather than a sculptor. He would take cognisance of the mason-work further than merely to come on the scenes after the building was completed to carve and finish bosses and blocks marked on the architect's drawings as "left rough for carver." The modeller would have something to say, and knowledge from which to say it, with regard to the work of the plasterers generally. He would not, as now, merely deliver so many dozen beautiful casts whose exquisite modelling only makes the plain walls look silly by comparison. And, where the case required it, the trained tradesman, or artistic craftsman, would merely direct the general finish of the work without introducing any decoration or ornament whatever. The unattainable ideal is, of course, that he should be the foreman of that trade. His guidance of the workmen under him might, and should, then be a real training of the workman. Coming from a man versed in all the methods and traditions of the craft, his orders and directions would be different from and more effective than those of even the most able architect, whose directions are often regarded, and perhaps rejected, as whims and fads.

MR. CHRISTOPHER WHALL.

The subject is in two parts—with a trenchant division. "The Practice of the Crafts" is one, "Modern Building" is another. One may start with the challenging paradox that there is no practice of the crafts in modern building. To practice a craft you must first learn it—and to learn it to any purpose you must (or you almost must, for genius can override all rules) learn it as a child—when the mind is a *tabula rasa* and the spirit docile and obedient. To learn a craft the learner should begin as a small boy, an apprentice; and his school should be the workshop. One instantly thinks of a child with hair cropped by a barber's basin, a little dagger and wallet, and in doublet and hose. For apprenticeship went out with the unfortunate advent of trousers. The apprentice washed the brushes, ground the colour, and waxed up the glass on the easel, and so on, and in intervals was taught the elements of his craft. And so he by degrees learnt it, learnt all of it, with the sure prospect of becoming a journeyman, and some day a master.

It may be asked, Is there no such training now? In a sense there is, but in essence there is not, except in the workshops of those idealists who have set themselves to revive the crafts, as they have already revived that almost forgotten name.

In the ordinary shop where art wares are produced there are, indeed, boys who do all the kind of small services just spoken of. But when it comes to learning their craft, they only learn one particular portion of it. In stained glass, for instance, they only learn the painting, or they only learn the cutting, or the designing, or the cartooning. And they do not become, it is not intended that they should become—everything is arranged so that they shall not become—masters.

When architects go about to furnish and to decorate in detail their buildings what do they do? They go to some big emporium where such wares are sold. And they see the master. One could with great safety stake one's bottom dollar that that man has never been an apprentice or a

journeyman, and that if locked up in a room by himself with the tools and materials of his craft he could no more produce a specimen of it with his own hands and his own skill than Mr. Whiteley or Mr. Selfridge (supposing such persons exist) could make the things they sell. Indeed, if an architect wants a piece of architectural detail in wood or metal or stone or glass, he might almost as efficiently supply that want if he left the ordinary purveyor of such wares and adopted the advice so insistently thrust upon us all in the railway carriages, "Get it at —'s."

What, then, has been the personal training of those who in these days sway the destinies of the crafts of modern building? Why, Public School, College, Office, and a book and sketch book study of past styles—with a tour to look at the old examples, and notes how to imitate (without touching the tools or materials) work of the past which derives all that one admires from the intimate knowledge and diligent personal use of tools and materials.

The matter is really very simple. To learn the elements of any craft is the key to the right way of tackling all crafts, and the intelligent way of dealing with them and directing them.

It would be a good thing that the students of painting, carving, stained glass, &c., at the Royal College of Art should be required to pass through the architectural class, especially if part of the training took place in a stonemason's yard. But it is far less important for those who are already craftsmen to learn architecture in such a yard than it is for would-be architects to do so. A man already a craftsman in one material has the key to craftsmanship in general, and sees the whole situation from a right point of view; he may soak in as much theory and learning and history and knowledge of the past as he can possibly absorb. Architects, and especially learners of architecture, will do well to get a workshop practice of something. It can be done now for about half a crown a month in the splendidly equipped and splendidly taught technical schools in all parts of London.

MR. W. CURTIS GREEN.

Those who inspired the formation of the Art Workers' Guild (to whom I am proud to belong) have done architecture a good turn; they linked together architecture and the crafts, and have built up a body of craftsmen unsurpassed in their way. As a result of this re-union, English churches and houses are the standard of excellence throughout the world. We know that the practice of the crafts has hardly touched our cities, or reached the sources of production; it has not done so yet, and, when we look back at the last fifty years or examine the present, is it not too much to expect that it should in so short a time have reached so far?

We have explored the arts and crafts of the East and of the West, of antiquity and of the Middle Age. Not content with the fulness this knowledge of history brings, some of us become enslaved first by one period of artistic activity and then by another, looking, some of us, for salvation in the resurrection of the dead rather than in the quickening of our own spirits. At one time it is the convention of Greece, the clearly defined articulate art; at another it is the orderly and majestic attributes of Imperial Rome; again it is the romance and daring of the Byzantine school; then our hope lies in the Middle Age, first the Gothic and then the Italian, and later the French development.

Each fresh enthusiasm has had its distinguished exponents, and has achieved wonderfully fine work in building and the crafts. These individual achievements satisfy all the definitions of great art but one. Collectively they are evidence that the modern is no whit behind his forbears in architectural genius and in individual craftsmanship. In other words, the modern mind is as capable of conceiving noble buildings and of doing beautiful work as that of antiquity or of any age. To name only a few buildings of different phases: St. George's Hall, Liverpool; Old Newgate, Westminster Cathedral, St. Agnes, Kennington, are noble conceptions, as creditable to their authors as are the monuments of simpler times. Each in a sense is an example of a still living manner of expression; for every great period has contributed something that cannot die, yet of none can it be said that "this is vital," for none are in a language common to all.

We ask ourselves whether it is just now possible to find a language common to all. Anything added over and above the necessity of the case appeals either to the heart or the intellect; to both if it is a work of art. In the case of the mechanical art of the suburban villa and place of worship the appeal is to the untrained mind. When the intellect

comes in, whether in Classic, Gothic, or Modern work, art becomes conscious; indeed, it is only when it becomes so and recognises the necessity for discipline and control that it can ascend to any height. On the surface this confusion is not unlike that at the building of the Tower of Babel, but below there is necessity and a basis of unity which will result in another era of vital art.

In our wanderings, whether to Versailles, among American sky scrapers, or to Surrey farmhouses, we are, let us believe, doing useful service. Our admiration of the civic sense of the Parisians is drawing us to inquire into their methods and aims; our intellect calls for the exercise and discipline of orderly and stately schemes shown in beautiful drawings. Our interest in the great American school lets us into the secret that the applied method of design is not satisfying the western world. Our tours among old buildings have taught us the right use of material, and we have mastered the meaning and value of texture; our little experiments in the planning of pleasant urban dwelling-places have shown us that while all things may be lawful all things are not expedient. So that, besides producing individual instances of fine work, we have collected evidence which another generation will sift if we cannot.

Education consists in a series of enthusiasms, in a series of awakenings. Beginning with the architect and craftsman, may it not filter down through the trades and through the public? If education is only skin deep, so are shams. If the false ideals that have so nearly smothered the crafts have taken one hundred years to grow up, why should they not pass away in a like period of time? Prophecy is a cheap business if the prophet places the event sufficiently far away, but faith has firm foundations in the faithful. The craftsman knows that the attributes of his art are not transitory; they may be dimmed in times of prosperity or change, but if they are buried 3,000 years, like the corn in an Egyptian sarcophagus, they will spring to life again in a suitable environment. For a time the environment is unkindly, and the practice of architecture and the crafts calls for considerable qualities.

(To be concluded.)

ILLUSTRATIONS.

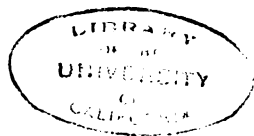
THE NEW NELSON HOSPITAL, WIMBLEDON.

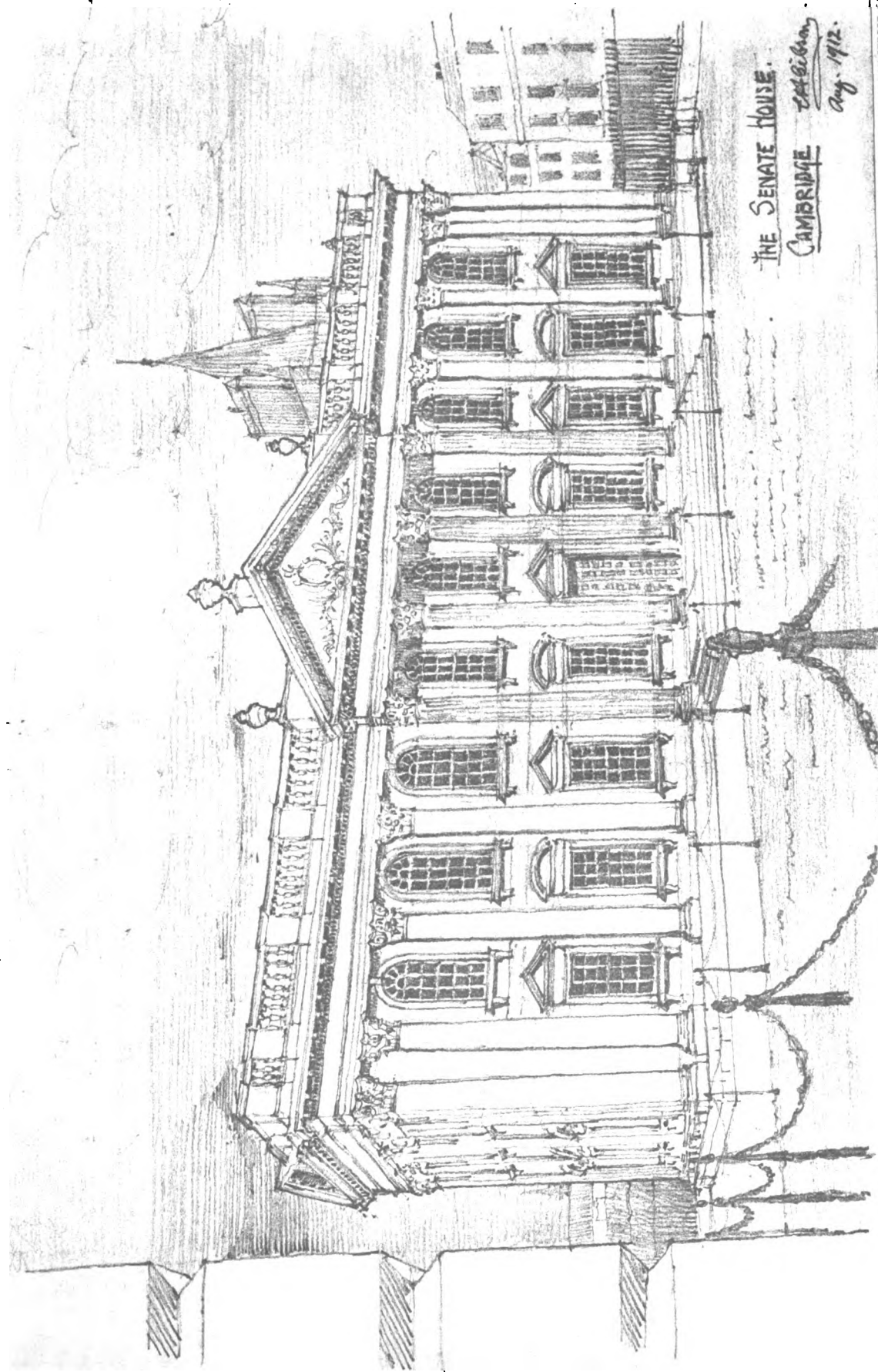
THIS hospital consists of three distinct blocks, connected together by a corridor. Two of the blocks contain wards, the third being devoted to the kitchen offices and quarters for the resident staff. The centre block contains a ward for women for eight beds, with bathroom, ward kitchen, and sanitary offices, two single bed wards, one of which is intended for paying patients, and a clinical or testing-room. The long axis of the ward is, roughly, north-west by south-east, and at the southern end is an open verandah. The sanitary offices are placed in a projecting wing, with a cut-off lobby off the near or corridor end of the ward, thus leaving the whole of the ward free from projections which tend to impede light and ventilation. The bathroom, also, instead of being placed in a projecting wing, is put, as it should be, close to the large ward, and is readily accessible to the single wards. At the northern end of the central block is the operating room, and anaesthetic and sterilising room adjoining. The ward block for male patients contains a similar arrangement of wards and ward offices, with the addition of an entrance hall, committee-room, and receiving-room. The northern end of this block is carried up a storey higher, and contains a ward for eight children, ward kitchen, stores, w.c., and sluice-room.

The administrative block is two storeys in height, and contains, on the ground floor, the matron's quarters, consisting of sitting-room, bedroom and bathroom, nurses' sitting-room, and the kitchen offices. On the floor above are bedrooms for five nurses and four servants, with bathrooms, box-rooms, w.c.'s, &c. In a detached building are a mortuary, post-mortem-room and coal store. The hospital was designed by Mr. Francis Hatch, Lic.R.I.B.A., and carried out under the superintendence of Mr. R. Allsebrooke Hinds, F.R.I.B.A.

THE SENATE HOUSE, CAMBRIDGE.—GREAT GATEWAY, TRINITY COLLEGE, CAMBRIDGE.

THESE drawings were made by Mr. E. H. Gibson during his tour as holder of *The Architect Travelling Studentship* this year.





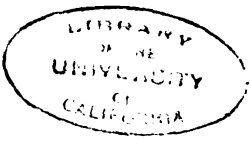
THE SENATE HOUSE.
CAMBRIDGE
E. H. Gibson
Aug. 1912.

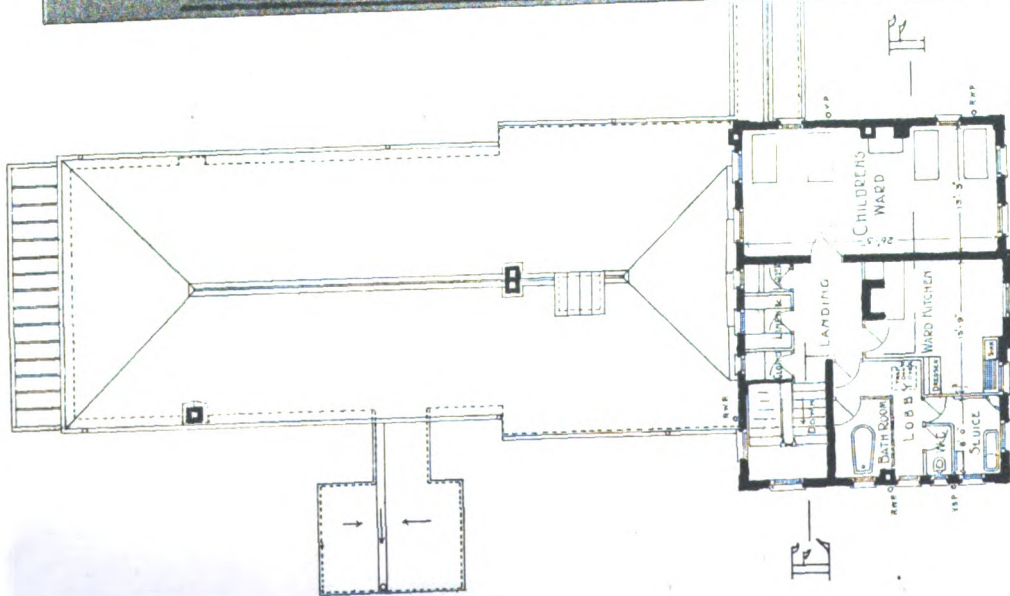
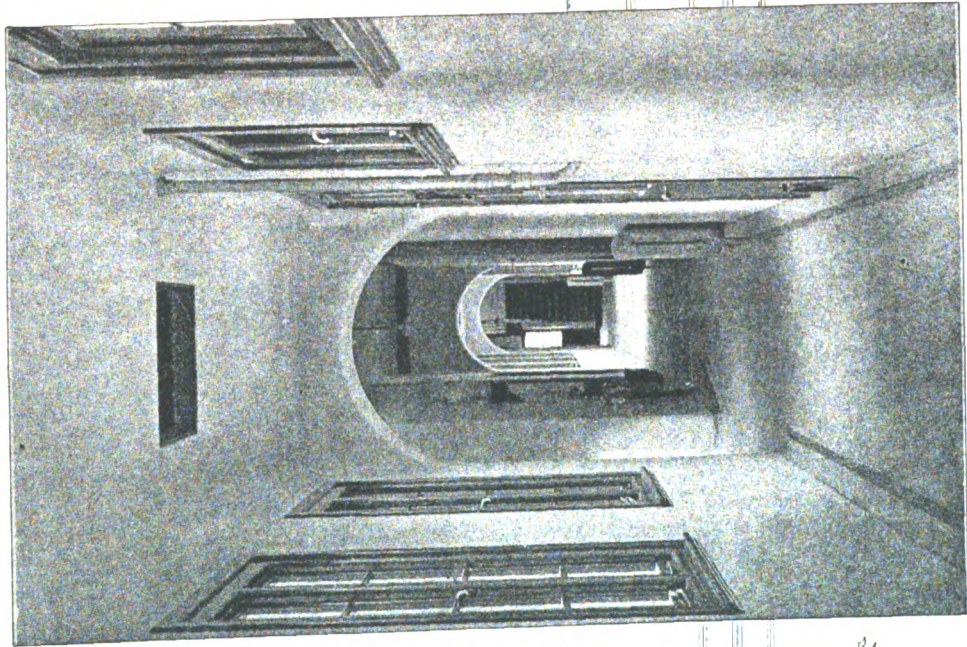
"INK PHOTO" SPRAGUE & CO. LIT. 69 & 70, DEAN STREET, SOHO, W.

"THE ARCHITECT" TRAVELLING STUDENTSHIP. 1912.

Drawing by the holder, Mr. E. H. GIBSON

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"THE ARCHITECT" TRAVELLING FUNDENSHIP 1912.
Aug. 1912.





FIRST FLOOR PLAN



Francis Hatch Lic. R.I.B.A.
Alfred Hinds F.R.I.B.A.,
 JOINT ARCHITECTS
 WIMBLETON HILL
 S.W.

INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

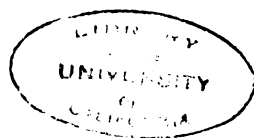
PHOTOGRAPH BY MESSRS. RUSSELL, WIMBLETON.

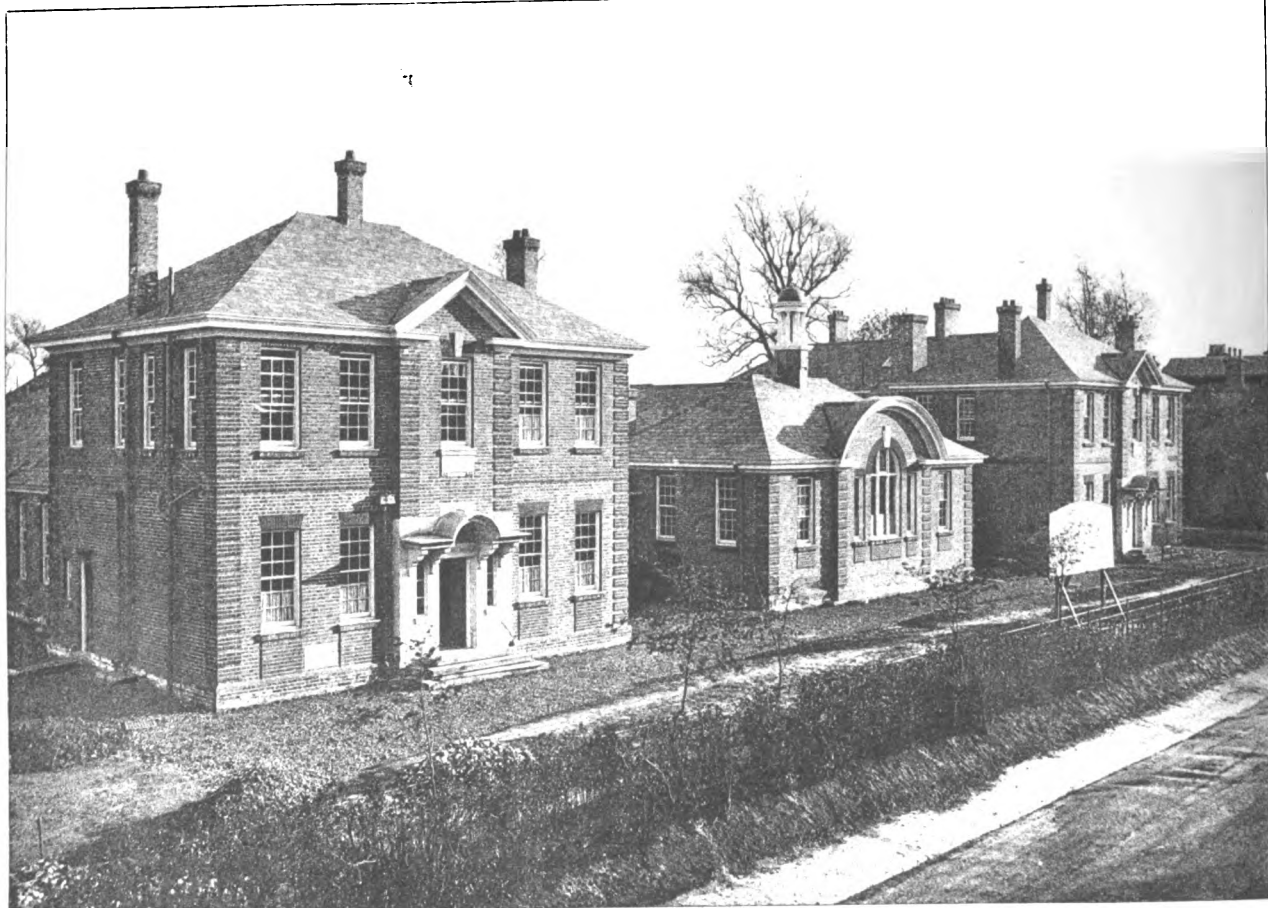
WIMBLETON AND MERTON HOSPITAL.
 Mr. FRANCIS HATCH, Lic. R.I.B.A. and Mr. R. ALLEBROOKE HINDS, F.R.I.B.A., Joint Architects.

JOINT ARCHITECTS
WIMBLEDON HILL
S.W.

100 Feet

WIMBLEDON AND MERTON DISTRICT





EXTERIOR VIEW.



OPERATION ROOM.

PHOTOGRAPHS BY MESSRS. RUSSELL, WIMBLEDON

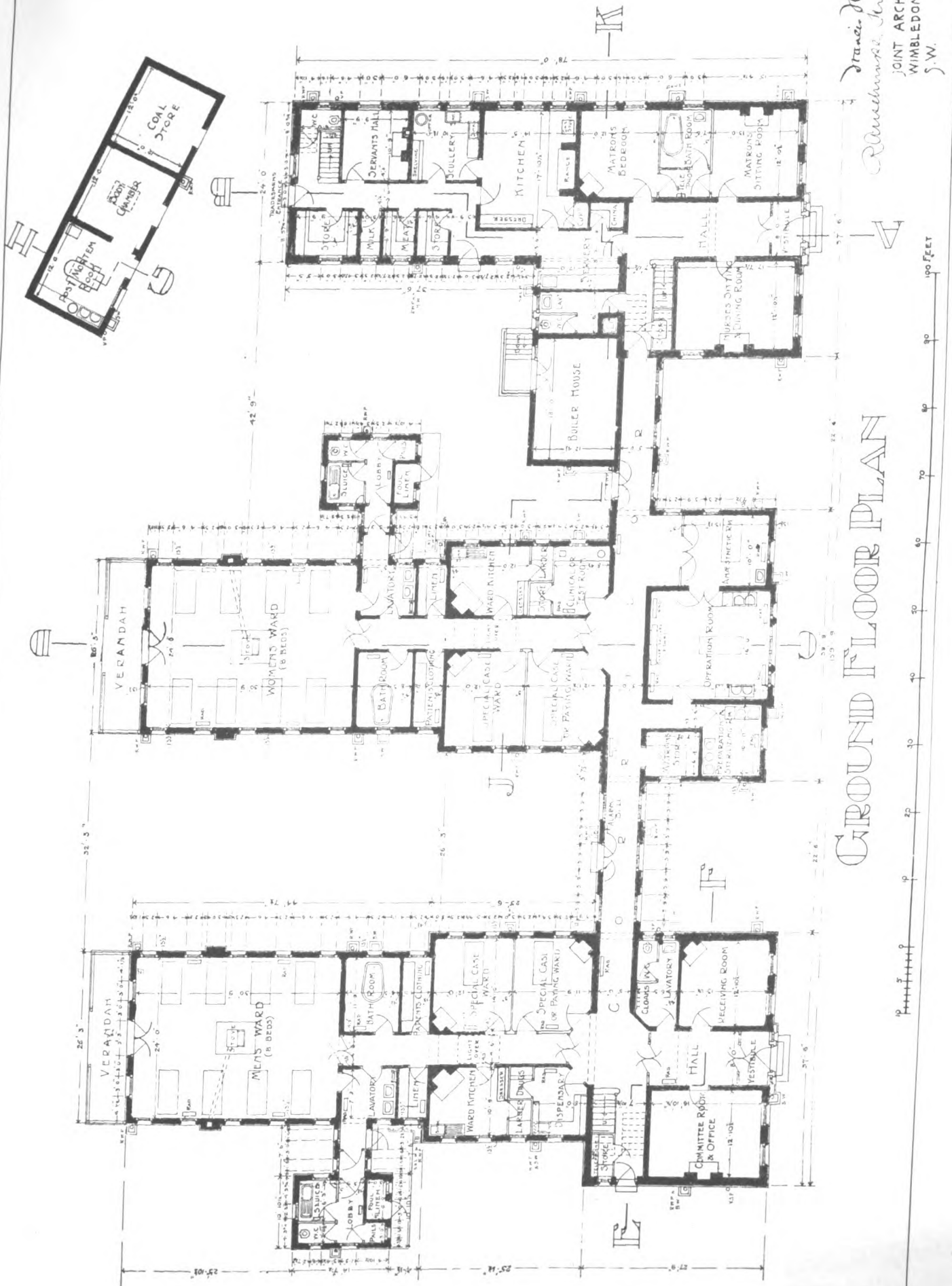


INTERIOR OF WOMEN'S WARD



CHIMNEY-PIECE IN COMMITTEE ROOM.





Francis Hatch Lic. R.I.B.A.
 Roushworth Hinds F.R.I.B.A.
 JOINT ARCHITECTS
 WIMBLEDON HILL
 S.W.

WIMBLEDON AND MERTON HOSPITAL.
 MR. FRANCIS HATCH Lic. R.I.B.A. and MR. R. ALLESBROOKE HINDS, F.R.I.B.A., Joint Architects.





GREAT GATEWAY, TRINITY COLLEGE.
CAMBRIDGE, (FROM THE GREAT COURT.)

Aug. 1912. E. H. Gibson.

"INK-PHOTO" SPRAGUE & CO. LTD 69 & 70, DEAN STREET, SOHO, W.



MODERN METHODS OF INDIRECT LIGHTING.*

(Concluded from last week.)

Dark Appearance of the Under Part of the Bowl in Indirect Fittings.—This is a very natural objection, and to those who are not used to the system it is one of the first points to be raised. It can be made much or little of, depending upon the point of view, but as a matter of fact the objection disappears with a trial use of the system. The fact is more noticeable for single-point installations; for example, one fitting in a room, in which case the bowl shows dark against the brighter ceiling. Where there are a number of points, however, and in the larger installations this feature is counteracted by the light from the other fittings. In any case, this effect can be largely reduced by employing a light-coloured or white bowl, and the lower part can even be made translucent if desired. In reality, practical experience shows this point to be one of minor importance, and one soon forgotten by those using this system.

Absence of Shadows; Flatness of Results.—This is a point of objection urged by many to indirect lighting systems, and is based on early experience with ineffective systems, such as cove-lighting. Illumination without any shadows is, of course, open to certain objections in producing a flat effect and unreal or confusing results. As we stated, however, earlier in the paper, the indirect lighting with the "eye-rest" system gives rise to soft shadows, so that this objection does not hold. The shadows exist, but are not so noticeable, owing to the complete diffusion of the light. It is quite a mistake to suppose that the system is "shadowless"; the shadows are there, but they are modified and reduced to an unobjectionable and harmless degree.

Coldness and Cheerlessness of the Light.—Such effects are not given with properly installed indirect lighting. It is possible, of course, to produce this effect by insufficiency of illumination through ineffective equipment in procuring the necessary volume of light upon the ceiling. As stated previously, the tinting of the walls can readily be employed to give any desired colour, tone, or warm effect in the resulting lighting. But in the main the objection arises through feeble illumination, and the same cheerlessness would be experienced with a similar illumination obtained by direct-light units above the line of vision.

Difficulty of Keeping the Fittings Clean.—The point has been made that the upturned fittings collect dust and dirt, which reduces the efficiency of the light by settling on the lamps and reflectors. This is valid criticism, but not a serious one. The system may require rather more attention to keep the lamps and reflectors clean than is required with some direct-lighting systems, but a test of cleaning costs in the case of Armour & Co.'s offices in Chicago was considerably in favour of this indirect system as compared to the direct systems. The item is at most a small one when we consider the superior results given by the indirect system, as the reflectors and lamps need only be dusted or wiped with a cloth about twice a month to keep them in good operating condition. It is hard to understand why there should be the objection to cleaning the fittings regularly when we consider that the furniture and fixtures of offices and homes are dusted on an average twenty to thirty times a month. Surely it cannot be much to ask and expect that lighting fixtures shall be dusted and cleaned twice a month.

Relative Cost of the Indirect System of Lighting.—The view that indirect lighting consumes an excessive amount of current compared with direct lighting systems has been discussed earlier in the paper. Like other criticisms, this arises largely from experience with the older and other more or less ineffective forms of indirect fittings.

Figures given in a paper by Wheeler (American Illuminating Engineering Society *Proceedings*, 1912) show for an indirect-lighting installation made in the village auditorium of Glenn Ellyn in U.S., the following results:—

Area of interior, 40 ft. by 60 ft.
Ceiling, 15 ft. high in centre, 12 ft. at sides.
Equipment, three eye-rest fittings, each containing seven 100-watt tungsten lamps, and suspended 5 ft. from ceiling.

* Abstract of a Paper by Mr. F. W. Willcox and Mr. H. O. Wheat. Presented at a meeting of the Illuminating Engineering Society, held at the House of the Royal Society of Arts, 18 John Street, Adelphi, on Tuesday, December 3.

Illuminometer readings made at thirty stations:—

Average foot-candles	4.20
Watts per square foot	0.87
Lumens per watt	4.83
Watts per lumen	0.207
Per cent. efficiency	56.

(Ratio total lumens generated to effective lumens.)

This excellent result was obtained with ceiling and walls of pure white putty coat plaster, and the floor of very light maple.

In a paper read by Lansingh and Rolph (Illuminating Engineering Society of U.S.A., *Proceedings*, 1908) an efficiency of 79 per cent. was stated for indirect lighting in a room with pure white ceiling, walls, and floor.

The writers have numbers of comparisons showing that the indirect-lighting system of installations effects material savings in many cases in energy consumption over the previous systems which the indirect system has displaced. These comparisons, covering all classes of installations in both large and small shops, office buildings, halls, theatres, &c., are most interesting evidences of the real gains in efficiency secured by this excellent system of lighting. In making comparisons between energy consumption of indirect lighting and other systems one must not fail to consider the fact that the indirect lighting effectually lights the whole interior, and not spots or parts of it, as is generally the case with direct lighting. Indirect lighting may cost more in many cases, but it does more. If the systems of direct lighting were compelled to give equally uniform and satisfactory lighting with the indirect they would also require a material increase in wattage.

The relative effects of direct and indirect lighting have been likened to watering a flower-bed by turning the hose into the air so that the water falls on to the bed in a gentle and well-diffused shower of scattered particles.

SOME FAVOURABLE EXPERIENCES OF INDIRECT LIGHTING.

Indirect lighting has been adopted in some of the largest lighting installations in the world. Careful and reliable tests were carried out by several large concerns in the United States in the past year, some of the investigations extending over a period of six months at the hands of a very competent investigating committee of engineers. The various systems of illumination were fully considered and thoroughly tried in each case, and the resultant decision was in favour of the "eye-rest" system of indirect lighting.

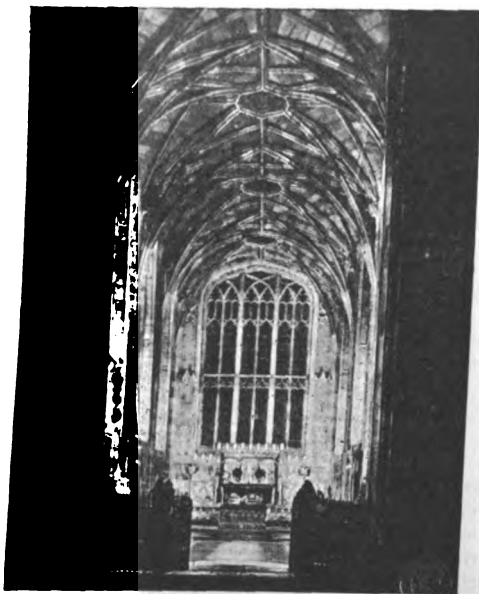


FIG. 1.—Concealed lighting in St. Mary's Church, Warwick, with tungsten lamps and metal reflectors attached to the east side of pillars and window recesses, showing the use of light to bring out the architectural features and beauties of the interior.

Such results render it desirable and interesting to inquire into the probable causes that contribute to such a marked preference for this system of lighting. We can consider these under two heads:—

1. *Considerations of a physiological and psychological nature which may be responsible for the preference for indirect lighting.*

2. *Practical merits and advantages of indirect lighting, which may explain the preference shown for it.*

Under the first heading may be included the following:—

Direct brilliant sources of light such as a lamp filament cause the eye to tire and weaken more than when the light is diffused. When bright sources are in the line of vision the eyes are constantly shifting about, seeking by movement to keep the light from being focussed with intensity on any one spot on the retina. Further, the discomfort from exposure of the eyes to bright sources causes the screwing up of the eyelids and puckering of the brow and the maintaining of the pupil of the eyes in a state of constant contraction, in order to exclude the excess light. The nervous energy so expended tends to produce brain-tire and drowsiness, while the fatigue induced by the constant muscular contraction makes itself manifest as discomfort in and about the eye.

In ordinary systems of lighting, such as direct systems, the sources of illumination are numerous, and as a rule many lights are included within the line of vision, so that the intrinsic brilliancy of each point of light impinges upon outer portions of the retina, and uses up the visual purple of the eye needlessly.



FIG. 2.—Indirect lighting in large office,* showing entire freedom from glare.

Side-light sources, within an angle of, say, 26 degrees cause rays of light other than those from the object focussed to enter the eye and use up the visual purple, with consequent loss of visual acuity.

In indirect lighting there is only one source of light—the ceiling—and therefore the rays are prevented from striking directly into the eye. In this respect the eye may be likened to a camera photographing an object with the sun in the field of the lens. This results, as everyone knows, in a fogged plate, and objects are indistinct unless they are highly illuminated. If this analogy holds, then when glare exists, as with ordinary systems of lighting, the intensity would have to be raised to produce the same acuity. Thus, of two systems of lighting, the one avoiding all glare, such as the indirect-lighting system, should require less intensity for equal visual acuity.

Dr. Percy W. Cobb (U.S.A.) points out that it has been shown that the eye loses sensitiveness by exposure to strong light, and conversely that in the dark the eye increases in sensitiveness.

Dr. Cobb, in discussing "glare," likens a light source in the field of vision to a loud noise, in that it distracts and tends to capture one's attention. There is a strong tendency to turn the eyes toward the light source, or it may be in some cases just the reverse—to get the eyes away from it. In any case the result is distraction and annoyance in trying to use the eyes on one's subject or work, and at the same time resist the tendency to look at the light source.

Another effect of glare already alluded to is physiological, and is seen in the extreme in the blinding effect produced by the light from a motor-car headlight being thrown in the eyes on a dark night. Again, it is explained in one's attempt to see past a brilliant arc light, to accomplish which one has to shade one's eyes from the brilliancy. The effect of glare in this feature is to reduce the ability of the eye to see clearly.

As glare is wholly eliminated in the indirect-lighting system, these effects, which fatigue and depress the visual function, cannot occur.

Cravath made tests on the effectiveness of light by direct and indirect systems by employing a number of observers to read thereunder and noting the degree of illumination considered in each case necessary for minimum comfortable results and for ample effect. His conclusions were that

with ordinary working conditions the diffuse character of the light falling on the work has more influence on the comfort of seeing and the amount of illumination required than the brightness of the surroundings.

Practical Merits and Advantages of the System of Indirect Lighting.

Has a large area of luminous surface (the ceiling or light-giving area), insuring a low intrinsic brilliancy of the luminous source, and a highly diffused character to the light. It therefore follows the diffuse lighting conditions of daylight in obtaining the working light from the largest possible surface.

One can sit in any part of a room and read with comfort, a condition not attained with other systems of lighting without employing a large number of outlets and points.

The source of light is high—the ceiling—with the result that, as the light is most excellently diffused and reflected to the lower part of the room, objects on the walls and in the room are clearly brought out. The reflected light from the objects (which causes them to be seen) is therefore not too intense, as is apt to be the case when the light sources are lower down in the field of vision.

One can assume a natural position in working or reading, just as in daylight. It is not necessary to sit in any definite position or facing any one direction or hold the book or work at any given angle. One sees satisfactorily in every position and direction.

The excellent diffusion of light prevents heavy shadows and sharp outlines, and avoids the very objectionable regular reflections from polished surfaces. It thus removes the glare produced from the glazed-paper surface of modern books and periodicals. One may protect one's eyes from exposed light sources by eye shades, &c., but the glare from glazed-paper surfaces caused with direct lighting is difficult, if not impossible, to avoid.

Permits adaptation of twentieth-century lamps and appliances to any form of architecture. As the actual light sources are concealed from view, there is no suggestion of incongruity of style or period. The daylight effect produced by the excellent diffusion of the light brings out all the forms and features of architectural design. It lights and sets off the ceiling, and has the desirable effect of raising the ceiling.

Avoids all possibility of any strong light sources in field of vision, and their discomfort and unhygienic effect to visual organs. Prevents images of the light sources from being reflected to the eye from surrounding objects. Avoids false shadows and high-lights, and similar distorting effects to decorative and structural features.

Analogous to the pleasing effect of theatre stage lighting, where all light sources are cut out of the direct field of vision, and the strongest possible light is thrown from concealed sources upon the stage or subject from the front.



FIG. 3.—Indirect lighting in picture gallery. (Note the absence of high lights on the pictures.)

Brings out the beauty of the architectural features of interiors, and reveals the details of structure and ornamentation of ceiling, arches, walls, columns, &c. This does what few lighting systems do—viz., it brings out the beauties of design of the interior, while at the same time it gives adequate illumination for the utilitarian needs of the occupants.

Gives close approach to daylight effects by skylight illumination, which, it is recognised, gives the most excellent illumination obtainable—the ideal of perfect lighting.

Requires fewer outlights than other systems for equal illuminating results. Perfectly adaptable to the majority of interiors without structural changes, and with a minimum

of alterations, the only conditions required being a light-coloured ceiling, either flat or arched.

Very easily and readily installed in place of existing fittings.

The bowl of fitting can be made to harmonise in ornamentation and colour with that of the ceiling or general interior. The bowls lend themselves to attractive effects of various kinds—e.g., as hanging baskets of ferns or flowers, thus concealing their real purpose. The fittings can therefore be made objects of beauty both by day and night.

Interesting and artistic special applications can be made, which dispense with having anything suspended from the ceiling—thus giving a clear ceiling—a feature that may be preferred in some cases. This result has been accomplished in the dining-room of the Congress Hotel, Chicago, by the use of marble pillars about 8 ft. high distributed about the room, each supporting an ornamental flower urn at top, in which the lights are concealed.



FIG. 4.—Indirect lighting in ballroom, showing effective and attractive results given.

In other cases the regular supporting pillars of the room have been fitted with a ring or circular shelf a few feet below the top, in which the lights are concealed and reflect to the ceiling. (This last application is, however, not productive of as good results as the standard plan of the "eye-rest" system, which requires an open bowl upturned to the ceiling.)

Satisfies most fully the real test of good illumination—namely, the ability of the eye not only to discern details distinctly, but to continue this visual effort for a good length of time with a minimum of eye strain and fatigue. Practical experience in office lighting has demonstrated a material increase of efficiency of the office force with the use of indirect illumination. After all, it is the eye, and not the illuminometer, which is the proper judge of what is the best and most satisfactory illumination.

That the indirect system meets the demands of the eye best is experimentally proven in hosts of cases of practical use of the system. It is the best proof of its supreme value and efficacy that it earns favour and adherents wherever it is tried. Those who live in England know the comfort of reading in the open on a cloudy day, a result due to the perfect diffusion which indirect lighting imitates.

The paper concluded with remarks showing the application and value of indirect lighting to the various classes of buildings and interiors.

Mr. Frank Baily, in opening the discussion, said that science, in the form of the tungsten lamp, had given a new instrument of torture into the hands of many users. It seemed a little inconsistent to have a paper of that sort read before experts and not before the users, viz. the general public, whom they wanted to educate. Another inconsistency was that such papers should be delivered in rooms where the worst forms of lighting had been installed.

Mr. Haydn Harrison thought that if the system recommended were generally adopted it would be a cause of self-congratulation to the supply companies. The figures supplied to them had all been based on rooms having light ceilings and walls. Considerably more energy would be required in the case of drab-coloured walls. From the point of view of health and eyesight the indirect system was certainly to be encouraged.

Professor W. C. Clinton remarked that an objection had been raised as to the absence of shadow, but he had found that a few sources of light, well selected, would give quite a sufficiency of it.

Mr. Charles Baker pointed out that walls and ceilings quickly lost their original brightness and lightness. In the

indirect system the distance of the light source from the ceiling was most important, as the difference of a few feet could have very great results. The type of ceiling put up in ferro-concrete buildings made indirect lighting rather more difficult. Both the supply authority and the fittings manufacturer would greatly benefit by indirect lighting. The consumer, he was afraid, would have to pay much more.

Mr. W. Mordey congratulated the authors on giving expression to the modern view as regards lighting interiors. But the system discussed was not as new as they seemed to think. A good many examples of it went back a number of years. The lighting of Sir Ernest Cassel's house in Park Lane was, perhaps, one of the earliest instances. What was required was "good seeing" rather than a high theoretical standard of illumination; one might see better with a bad light than with a good one if one saw with comfort. A harsh light was like a whip-lash over the eyes. Personally, he did not believe the indirect system would increase the electric light bill. He was of opinion that in many cases where the rooms were not high it was possible to get better light as regards "good seeing" without increase of expenditure.

Professor D. G. Louis was of opinion that the sources of light should be not too widely distributed if the best effects were to be obtained.

Mr. Campbell remarked that when architects heard of indirect lighting they only thought of cornice lighting. Excellent results were obtainable by the latter, provided that the ceiling above the cornice was the right shape.

Dr. Hickman contended that from an architectural point of view the indirect system was very excellent, but for general work it was unsatisfactory. For a theatre or place of that sort it did very well. There was in his mind, however, a feeling that the retina was occupied by the general illumination, and that a local light over one's left shoulder was required for working.

Mr. H. P. Trotter, the chairman, in closing the discussion, said he very well remembered seeing in an exhibition in 1881 a room illuminated by the indirect system. It had always been his impression that this was a very expensive mode of lighting. He had been astonished since to learn that there was not that expected loss. He held that in an office one required local lighting.

Mr. H. C. Wheat then briefly and satisfactorily replied to the points raised. On the question of increased cost, he remarked that with the indirect system fewer points of illumination were required. They did not claim that indirect lighting was a new discovery; the only new thing about their paper was its explanation of the "eye-rest" system.

THE DECORATION OF SMALL HOUSES.*

By ARTHUR SEYMOUR JENNINGS, F.I.B.D.

OF all the fields of active work in which the Incorporated Institute of British Decorators can employ the influence, talent, and experience of its members none, to my mind, equals in importance that of the decoration of small houses, by which I mean dwelling-places of moderate size, ranging from the modest country cottage to the kind of house which, in London, is of a rental value up to, say, £40 per annum.

I confidently make this assertion for several reasons. First, the field is of such vast magnitude; second, it has been almost wholly neglected; and, third, many of those who occupy small houses are earnestly seeking assistance in bettering their artistic surroundings. It is far from my intention to deprecate even in the smallest way the excellent work already accomplished by the Institute, the impetus it has given to the uplifting of decorative art in this country by the very practical method of offering travelling scholarships and in other ways. This work, it is to be hoped, will be continued and extended as circumstances permit until a stage is reached when our churches, public buildings, picture galleries, and theatres are decorated by our own countrymen in a manner which we can take pride in.

I have said that the small house has, from a decorative point of view, been neglected, and this is but the result of the condition of things as they exist to-day. Consider the case of a man who occupies a small house in the suburbs, which he has perhaps purchased through a Building Society, and the rental of which is from £30 to £40 a year. He and his wife are anxious to have their house decorated in good taste, but they have no actual knowledge whatever of the

* A Paper read before the Incorporated Institute of Decorators at the Painter-Stainers' Hall, London, E.C., on November 25.

subject. What can they do? Certainly they could put the work in the hands of an eminent firm of West End decorators, who would produce everything in the most perfect taste, but it would cost, or they think it would (which for our present purpose is exactly the same thing) far more than they can afford. Certainly they could pay a modest fee to an expert to work out a suitable scheme of decoration, but this is rarely done, and they would have a great difficulty in knowing where to apply for such assistance.

What does happen in ninety-nine out of a hundred cases is this. They obtain an estimate from a local "builder, plumber, and decorator," who duly supplies the estimate, accompanied with one or more pattern-books of wallpaper upon which they spend hours of anxious thought, although, if they but knew it, there are not in most cases a couple of dozen papers in it which are worthy of being hung in any home occupied by anyone having the slightest pretensions to good taste. Perhaps they decide to use washable water-paints, but in any case their selection is almost certain to be bad. In both cases they are groping in the dark, and, having before them the poorest patterns, must come to a decision practically without taking into consideration the all-important questions of furniture and of pictures, to say nothing of the dimensions of the room, its shape, its aspect, its windows, and the many other conditions which ought to be taken into account under such circumstances. Is it any great wonder, then, that so many small houses are badly decorated?

Now, there are in London many hundreds of thousands of such houses, and, including the country, a vast number in the aggregate, so that it will be acknowledged that there is plenty of work for the Institute to do if means can be found to carry it out on a practical basis.

I have three suggestions to offer. They are all applicable to the whole of the country, and, therefore, to the different branches of the Institute. They will entail a good deal of hard work on the part of Fellows, but I venture to suggest that this is rather a good feature than otherwise, because it is by hard and continuous work alone that any body of men can hope to fulfil its mission, and, speaking from a somewhat extensive experience of decorators in Association work, I believe that many members would be quite willing to serve on committees if they were reasonably certain that good results would accrue from their efforts.

My first suggestion relates to wallpapers, because these decorations, if properly designed and selected, possess so many advantages that they will in every probability continue to be popular for centuries to come. They are cheap, convenient, and, on the whole, sanitary. What influence can be brought to bear with the view of improving the design of all classes of paperhangings, especially those which, from their low prices, are certain to be used in our "small house"? What practical means can be taken to delete the bad designs, or, rather, to put a stop to their production? My answer is that it can be done by submitting the designs before the blocks are cut to a competent authority, which would only give their approval to those designs which in their opinion possessed the necessary artistic merit or came up to a sufficiently high standard, and I need not remind you that this would by no means necessarily imply an elaborated ornamentation or marked novelty.

Such an authority could, I suggest, be set up by the Institute by appointing from among its Fellows an Advisory Committee to pass designs which should from time to time be submitted. As is well known, public taste in decoration, as in other things, varies considerably in different parts of the country, so that it would probably be found desirable to appoint three such committees—one in London, another, say, in Yorkshire, and a third in Scotland.

It would doubtless be necessary, for the successful carrying out of this plan, to arrange with the manufacturers to pay certain fees for the professional advice thus given, and these fees might either be devoted to the important educational work of the Institute or be shared among the members of the Advisory Committee. Probably in practice it would be found desirable, while the plan was in its experimental stages, and the number of designs limited in number, to let the fees go to the Institute, and later, when it had proved a success, to make other arrangements.

Fortunately for the furtherance of this scheme, practically the whole of the wallpaper manufacturing industry in this country is in the hands of a single firm, and if they consented to submit some of their designs for approval in the manner indicated, and to pay a suitable fee, the rest would be comparatively easy. There are great advantages to the manufacturers in the plan suggested which needs to be em-

phasised. It is well known that out of every one hundred new patterns which are brought out year by year at least twenty, and often more, may be regarded as absolute failures. The cost of cutting the blocks and printing is precisely the same as though the paper had succeeded. Now, it is clear that the cost of these failures must be distributed over the cost of those which succeed, hence if the element of risk were lessened a considerable saving would be effected. I take it that at least a number of the members of the committee would be actual buyers of paperhanging, and if they had passed designs they would, when these designs came on to the market, no doubt stock them; hence their success would be assured. Then, again, those designs which were approved will be "hall-marked," so to speak, for the general trade, while those rejected would probably never be cut at all.

I am well aware that this scheme would take some years before it had a very marked influence on the wallpaper trade as a whole, but if it were started experimentally with, say, 100 designs to commence with, or even less, I believe it would become a permanent feature. The danger at first would be that only designs of expensive papers might be submitted, and efforts should be made to include also cheaper varieties. It is, as is well known, the custom to print successful designs of an expensive character in future years on cheaper papers, and this course would doubtless continue to be followed.

Those who doubt the practicability of my suggestion would do well to closely examine the method at present followed in choosing wallpaper designs—a method which I suggest is largely responsible for the poor decoration of the small house.

The manufacturer naturally produces the patterns which he thinks will sell best; in other words, he supplies the demand which he believes exists. In order to cater for all tastes he prints patterns, good, bad and indifferent. But the actual selection of patterns which are included in the "builder, plumber, and decorator" book to which I have already referred is not made by the manufacturer at all, but by the particular merchant or factor who supplies the books. This merchant selects those patterns which he believes will sell most readily, apparently forgetting that it is within his power, in conjunction with the manufacturer, to create a demand for the better class of designs by including them in his books.

The self-respecting tradesman of the better class only shows goods which he knows will give satisfaction, and rigidly excludes those of the very cheap and nasty variety. Why should not the wallpaper dealer act upon the same principle? Twenty years ago every wallpaper pattern-book of the cheaper class was made up of about one-third of the hideous patterns known as "mosaic sanitaries." To-day these are still used, but to a very limited extent. "Sanitaries," of course, are merely papers which are printed in oil colour instead of distemper, and are therefore washable. The process can be used just as well for a good design as it can for a very bad one, and this is proved by the fact that there are now excellent patterns to be had printed in oil colour, and it is significant that the word "sanitary" is being discontinued as applied to this class of paper, no doubt because of the association suggested by the atrocious designs of years ago.

I claim with all respect that the builders' merchant is not a competent authority to select wallpaper hangings, which requires the services of a trained decorator. The merchant probably deals in ranges, baths, ironwork, bricks, lime, and timber; in fact, everything which goes to make up a building. How, then, can he be expected to be a judge of wall decorations? It may be said that it is evident that his selection of papers sells, or he wouldn't continue; and this suggests a point which is often overlooked. A large majority of small houses (in London, for instance) are not owned by those who occupy them, but are rented from the owner, often on a three-yearly agreement. The landlord, as he is usually termed, in only too many cases gets his decorative repairs done as cheaply as possible, and the practice is to have a wallpaper pattern-book sent to the tenant from which to make a selection. Hence this tenant, if even he be capable of choosing well, is greatly hampered in getting a good result by the paucity of even moderately good designs. But he is forced to make his selection from that particular book, and the builders' merchant gets his order and imagines that the designs are quite as they should be. In making this sweeping condemnation of pattern-books I by no means include all merchants. There are in London alone a dozen or more whose business is to select designs of merit, but as things exist they sell mostly to the better class of customers. If the tenant were a free agent, and could choose his paper-

hangings where he wished, it would certainly lead to a great improvement generally. Even at the best I believe the merchants would be glad to have the advice and assistance of a jury of practical and trained men, such as would be provided by the formation of an Advisory Committee such as I have counselled.

I now come to my second suggestion, which, briefly stated, is that the Institute should offer to give through its Fellows for a suitable fee professional advice on all matters connected with decoration. Other professional men who accept commissions, including details of special work with which they are not very familiar, seek, as a matter of course, the assistance of brother professionals who have given it a close study. Thus the architect on occasion consults the engineer, and the general practitioner among medical men the specialist. If I am not mistaken, our highly esteemed President has acted as consulting-decorator on much important work.

But what I have at present in mind is the occupier of the small house who has refined tastes and who recognises the fact that he needs expert advice if he is to overcome the many difficulties which surround the subject and obtain that which he and his good wife so ardently desire, as artistic a home as his means and circumstances permit. Such a man would be very willing to pay a modest fee of a couple of guineas or so to a competent gentleman who would come down to see the house, the pictures, carpets and furniture, and on the spot make a selection of wall hangings or choose the colours for the painted work or for the walls of those rooms which were to be distempered, and leave the whole "cut and dried" to be carried out by the local house painter, who, having a safe guide all mapped out, could proceed without difficulty.

A half a day or a little more would be amply sufficient time in which to do such work, and at least some of the selections would answer in other places. A class of clients who would be very likely indeed to avail themselves of such assistance would be the speculative builder who puts up houses in rows from an architect's design, but who is often foolish enough to attend to the decoration himself, probably with the aid of some "job lots" of wallpaper he has purchased at a bargain. If he realised how very greatly a good scheme of decoration assists in attracting a tenant or customer—and many builders do realise this to an extent—he would be far from begrudging the few guineas it would cost him to obtain sound advice when he wanted it. When a member of the public wants the services of a reporter he applies to the Institute of Journalists; if an accountant, to the Incorporated Society of Accountants, and so on. If he wants professional advice on decoration, surely he should apply to the Incorporated Institute of British Decorators, if even the fee he is prepared to pay does only reach a modest sum.

Let us consider just a few of the little things he might do for the tenant of a small house, and a few of the things he might prevent. He could see that the plain-surfaced background—or one slightly broken up by a diaper or spotted design—had due consideration when there were good pictures if even they were intrinsically worth but little, and good etchings and coloured prints done by the three-colour process which gives such good results at so small an expense. He could see that the bedrooms were light and cheerful in design, that the hall, being practically bare of furniture, would have a bold design, with a reasonably large amount of ornamentation. He could insist on picture mouldings being used throughout the small house, even in the kitchen, and could in most rooms leave it perfectly plain, to be "put in"—that is, distempered—with the ceiling, and by doing this he would save his client not a little money and give him rooms finished in appearance. If "landscape" friezes were chosen, or those having prominent patterns, he could see that they were not mutilated and spoiled by being so badly hung that portions of the design would be carried around an angle. He would insist that every wallpaper design in a house was properly centred; if a stripe, then that the pattern was exactly equal on either side of the mantelpiece. In the small drawing and dining rooms there would be ample room for his expert knowledge. He might use the very narrow strap designs which are becoming so popular underneath the picture moulding and immediately above the skirting board in the Continental fashion, and he might, in addition, use the same straps vertically at the angles to produce panelled effects without actual panels. If a room were set apart for a nursery, and he chose a frieze likely to please the children, he would certainly see that it was not hung close to the ceiling in the ordinary way where they could never see it, but would probably place it about 5 feet from the floor line and fill in the space above with either a plain paper or a diaper. He could see that the kitchen was very light, and if the window

was small would use a varnished tile paper almost white, so as to help matters, for a dark kitchen is an abomination. If he recommended the much-abused enamel which, because of its durability is certain to long remain popular, he could arrange to have it not staring white, but give it a broken tint sufficient to accord with the prevailing colour of the room, and this he would do also in tinting his distemper for the ceiling and frieze. On the exterior he could probably do as effective service by using white for the sashes, and a bright varnish colour for the front door to brighten up a dingy front. Then, again, he could advise that white lead should not be used at all, at least in the interior, because of its very poisonous nature, but would recommend either a zinc oxide or a zinc sulphide paint in preference, particularly so as he would find it cheaper. In fact, there is practically no end to what he could do in even a few hours, and, once settled to the satisfaction of his client and himself, he might use a greater part of the scheme again and again in different houses situated at some distance. There are so many pitfalls into which the house owner who makes his own selections can fall that I hesitate to select from among them any which his adviser would warn him against. But there are a few which may be mentioned. For instance, pressed paper dado in a narrow hall, elaborate relief friezes, with its almost inevitably mutilated pattern, the crude and meaningless landscape friezes or borders, figures in relief on the door panels, gold on the wallpapers or woodwork—all these, as well as very many others which might be mentioned, are wholly unsuited to the small house. Repose and restfulness are the great desiderata in the decoration of such residences. The advisory or consulting decorator is more than a possibility—it is a crying want.

ART SCHOOLS.

I approach the third and concluding part of my subject with some diffidence, because I realise that there are many difficulties to overcome, not, however, that I believe them to be insurmountable. My suggestion here is that the Institute should endeavour to identify itself more closely with the art schools of the country, so far as decorative art is concerned, with a view of raising the standard of public taste, including that of the occupiers of small houses, and of producing more of practical utility than is the case to-day.

It will, I trust, be fully understood that I have no desire to make an attack on art schools generally; but I venture to assert that the actual practical results fall lamentably short of that which might be expected, and are far from being commensurate with the expenditure. Leaving out of the question the work done at South Kensington and at some of the art schools in the principal great cities, the instruction frequently given is, in my experience, only very partially directed toward practical ends, and the students are mostly young ladies who wish to fill in their time with a little fancy designing, a little dabbling in oil and water-colour painting. The men and women who wish to acquire knowledge by which they will earn their livelihood have but little to encourage them. I am well aware that in small art schools the funds available will not permit of the employment of a sufficiently large staff of instructors. I need hardly remind you that it is absolutely essential in teaching all branches of applied art that the instructor be practically acquainted with the industry in which the art is to be employed. Thus the teacher of design for metal work must be acquainted with the characteristics of the metals in which the designs are to be carried out. Indeed, it is not too much to say that he should have actually worked at the trade to some extent. In designing wallpapers it is clearly very necessary to take into consideration the question of repeat and many other practical matters relating to the printing of the papers. Many designs produced by art school students are useless because of this want of knowledge. Among some designs submitted to me some time since was one, the work of a young lady, in which some twelve colours had been used. A small pink dot occurred about twice in the design, and on my suggesting that this might be omitted without detracting from the value of the design as a whole, the young lady said, "I think it makes the pattern look a little better"; and it was only when it was pointed out that the insignificant dot would necessitate cutting a complete block to print it and would cost almost as much as though it played an important part in the design, that she realised its sheer wastefulness.

But there is another and more serious defect common in such designs which arises from much the same cause, viz. that the instructor is not a practical man, in this instance is not a practical decorator. This defect is that the designer is far too apt to make the pattern pretty in itself, apparently

forgetting that the small piece forms but a very little part of the surface of the wall on which it is to be used; in other words that the piece will look vastly different when it is repeated many times on a wall expanse measuring at least several yards in width and two in height. The only way, to my mind, to design a paperhanging is to draw the ornamentation for the whole wall of average size and then to cut out a portion of it, which may be used as the pattern. Details which may appear coarse in the piece will often look commendably bold in the mass, and details that are delicate and refined in the piece are not infrequently either lost altogether in the mass or have only the appearance of being weak and finiky.

To introduce into art schools a more practical plan of operations would be work well done. And I suggest that this Institute could do it through committees and on a similar plan to that followed by many of the Master Painters' Associations in connection with the teaching of painters' work. The conditions in the two classes may be said to be practically identical. In many of the painters' classes the instruction formerly given was not conducted on a commercial basis, so that even boys who were very successful in the classes were little or no good when they came into the workshop. A single example will indicate what I mean. Under the old system a lad was taught the importance of thoroughness in work, and very properly so, but so "thorough" did he often become that he would take as many days to finish a piece of work as it would hours in an ordinary workshop. His ability was, therefore, wasted.

What the master decorators have done, and are doing, in London, Leicester, Glasgow, and other places is to form a committee to act in conjunction with schools, and by arranging that at least one member shall attend on every evening when instruction is given who is in a position to make valuable suggestions (privately, of course) to the Principal and to the instructor as to the course the tuition should take. An occasional demonstration by an expert on some particular branch of the subject gives zest to the lessons, and forms a break which is usually looked forward to.

I see no reason why the same plan should not be followed in connection with decorative art. There might be a little prejudice as to "interference" to overcome at first, but ultimately I believe the assistance would be very welcome, for, after all, the Principals of art schools desire, as a rule, that the best results should follow their instructions; as matters are they rarely do so.

What is wanted is to do away with the idea which unfortunately prevails so largely among art teachers, that to put art on a commercial basis degrades it. It does nothing of the kind. It popularises it; it brings it within the reach of the masses, of the owner and occupier of the small house, and on that account, I earnestly believe, deserves the closest attention and the most active assistance which this Institute can give it.

"WHEN THE WORLD WAS YOUNG." BY MISS A. M. BOWERLEY, A.R.E.

THERE can be nothing but a chorus of approval in regard to this charming collection of Miss Amelia Bowerley's works in water-colour and etching at the Dowdeswell Galleries. A more delicate, fascinating ensemble it is hard to picture; and even though here and there our praise may be appreciably modified, it can never amount to dispraise or to anything approaching this.

It may be said in a phrase that the keynote of this artist's work is decorative effect, in some instances being sounded deeper than in others, but always dominant. The chord attuned on her highly lyrical instrument is of the most harmonious nature. Her children's faces are not, it is true, always as childishly pretty or even attractive as we might wish to see; yet the exceptions serve but to throw into greater prominence the many instances satisfying our child-loving nature.

Miss Bowerley dreams of the merfolk, and then, during her profitably employed hours of work, presents us with her charming visions of mermaids and water-babies. Regard, for examples, "The Depths of the Sea" (No. 8), replete with both grace and virility; "The Pool," showing a little merboy seated in a rocky cleft; and "Sleeping Water-babies," a vivid realisation of one of the artist's attractive dreams. "Flotsam," another of this series, is delightful in its portrayal of the sea and shallow beach; "When the Winds are all Asleep" and "A Sea-baby" are as rhythmic in etching as those previously mentioned are in water-colour.

"Snow-white and the Dwarfs" depicts the incident in the beloved child's tale, where the young girl is being borne along in the glass coffin by her companions, and is a work full of excellences. "June" shows a lady playing with a small girl seated upon her lap, the whole being embowered in delicately tinted pink roses; it is a work of the highest order of merit. "The Bathers," "The Storm," and "Low Tide" are good in their seascape treatment.

It is hopeless to essay individualising throughout, and we must conclude with references to three more of the etchings, "Goblin Market," "Dandelion Clocks," and "A Meeting," the first-named being one of the few without child-life, and the last-named depicting Love's young dream at a very tender age indeed.

"To some Love comes, whilst yet the years are few;
For youthful lovers spins a golden thread;
Who living, love; Love lasting till they're dead,
Till Heaven itself is brought within their view."

We have never seen a more refreshing display than this presented by Miss Bowerley.

FRENCH RENAISSANCE ARCHITECTURE.—IX.

THE ninth lecture of the course being delivered at University College, Gower Street, W.C., by Mr. W. H. Ward, M.A., A.R.I.B.A., dealt with "The Puristic and Classical Reaction and Archæological Design—the styles of Louis XVI. and the Empire."

The influences which went to the making of the so-called styles of Louis XV. and of Louis XVI., different as the results are from one another, were, pointed out Mr. Ward, in part the same. Both had their origin in a reaction against the absolutism and the artificiality of the age of Louis XIV. In both we may note a desire to return to simplicity and to nature, but different roads were taken to reach the desired goal. In the style of Louis XV. the Rococo school is prominent with its predilection for free flowing curves, its abandonment of symmetry, and also its use of nature motives for decoration. By the middle of the eighteenth century new ideas were afoot. There was a growing enlightenment of the middle classes and a growing discontent with the inequalities of the social system. The mordant sarcasms of Voltaire, and, still more, the Utopian doctrines of Jean Jacques Rousseau, paved the way to a change of front in the popular mind which had a direct bearing upon architecture. In addition to these intellectual influences, public fashion in art was affected by the writings of Lessing and Winckelmann, by the discovery of the buried cities of Herculaneum in 1719, and of Pompeii in 1748. Throughout the century, too, a number of people visited and measured ancient monuments in Southern Italy, Sicily, Greece, and the Levant. Greek architecture thus came for the first time under the notice of modern European architects. The discovery that the Vitruvian and Palladian systems had but small basis in fact brought about a revolution. At first contemporary work was merely purified from Barocco emphasis and reduplication, and from the vagaries of Rococo ornament and planning. Free flowing lines and rounded angles were discarded for the straight line and pure geometrical forms. The riot of curves of the Rococo came to be regarded askance as a fit expression of an age of profligacy, while the more rigid lines of the new manner symbolised a return to austerity and virtue as preached by Rousseau.

The first architect who adopted the new ideas was Jean Nicholas Servandoni, whose façade of the church of St. Sulpice created a sensation in 1733. Soon it was followed by Soufflot's rebuilding of the Hôtel-Dieu at Lyons, and then in Paris by the Fontaine de Grenelle, in which the sculptor Bouchardon carried the classical reaction still further. From this time it gained ground, though almost to the end of Louis XV.'s reign it ran concurrently with the older manner. About 1750 a powerful recruit was gained in Jacques Ange Gabriel, first architect to the King. Powerful lay supporters of the new style were Madame de Pompadour and her brother, who became Superintendent of the Royal Works.

Soufflot and Servandoni may be regarded as the originators of the new style. Its most representative architect, however, is Gabriel, who had a wide scope for the exhibition of his talents during the prolific second half of Louis XV.'s reign. At Fontainebleau and Versailles not much of his work exists. At Compiègne he was more fortunate in being able to carry out in its essentials the great scheme which he drew up in 1751. Two other fine works of Gabriel's are

among the principal ornaments of Paris—the Ecole Militaire and the Place de la Concorde. Perhaps his most consummate accomplishment, and certainly the most perfect example in France of domestic architecture of this period, was the Petit Trianon built by Louis XV. for Madame du Barry, and presented by Louis XVI. to Marie Antoinette. Here exquisite perfection of proportion and purity and refinement of detail invest an almost cubical block with extraordinary charm.

The style of Louis XVI. had not long won its victory over that of Louis XV. before signs of another change appeared on the horizon, more or less consequent on the general unrest of European society. The theory of the Rights of Man expressed itself in architecture in the right of architects to reject traditions of composition, and of every man to select his own models and methods. This break up resulted in that eclecticism which marked the architecture of the nineteenth century. At first it merely took the form of intensified archæological classicism. This may appear strange at first sight, said Mr. Ward, but it must be remembered that so much in the French Revolution was based on a reading, often a misreading, of Antiquity. Even before that era architecture had begun to take an excessively archæological trend.

Under Napoleon's rule there was a sort of aftermath of the last style of the old régime—though there is a distinct line of demarcation between the Louis XVI. and the Empire style. The former refined society was replaced by an aristocracy of parvenus, and the old architects and craftsmen had disappeared. That architecture and decoration were saved from a complete decadence is to a large extent the work of two artists of great talent, Percier and Fontaine. These two gathered up, so far as possible, the broken threads, and worked out a variant of the late style well suited to meet the taste of the age without pandering to its vulgarity. Empire decoration, for instance, had none of the soft and mellow graces of its predecessor; but in the hands of the best masters it is often extremely attractive, and has at least the merit attaching to any consistent and homogeneous style.

The Revolution led ultimately to the break-up of all classical traditions; and though the last of the classical styles in the direct line, that of the Empire, lingered on under the Restoration till about 1830, the heart was taken out of it by the fall of that Caesarism of which it was the reflection. It then found itself in conflict with a number of new influences. The romantic movement followed, and with it a host of revivals in architecture. Traditional design died down in the second period of the nineteenth century to so faint a flicker that there seemed a likelihood of its utter extinction. This did not occur, but since there has never been any style universally accepted throughout France since that of the Empire it may well be considered, said Mr. Ward in conclusion, as the last of those to which the Renaissance gave birth.

LONDON COUNTY COUNCIL AND PREVENTION OF FIRE RISK.

THE administration of the London Building Acts was again the subject of questions addressed to the Chairman of the Building Acts Committee at this week's meeting of the London County Council. As stated in the paragraph upon this subject in our last issue, the agitation has arisen out of the recent fire at the premises of Messrs. John Barker, Ltd., of Kensington.

Mr. C. Jesson (Walworth) asked if it was a fact that officials of the Council had from time to time suggested to the Building Acts Committee that greater progress could be made in the application of the requirements of Sections 9, 10, 11, and 12 of the Building Act, 1905, but that no encouragement or facilities were afforded them in the shape of extra staff? Was it the intention of the Committee to recommend that the staff should be strengthened, and had any effort been made to encourage building owners to make their own suggestions, and present their own plans to meet the requirements of Section 9, so that the Council might be saved large expense in the preparation of some of the surveys and plans? Mr. Jesson also asked whether many of the plans required by the Council, and for which surveys were made, could not often be obtained by courtesy from the building owners, and whether a large number were not in the archives of district surveyors, and could be borrowed by arrangement?

Mr. Andrew Taylor (Chairman of the Committee) replied that no suggestions had been made by officials in the direc-

tion indicated, but the Head of the Department annually reported progress under the various sections of the Building Act, and took the Committee's instructions. The question of strengthening the staff would be considered. Efforts had been made to encourage owners to present their own plans and suggestions, and it was possible to secure plans required by the Council by the courtesy of such owners. District surveyors, however, could not demand more than an inspection of plans, except in the case of public buildings. Since the majority of buildings coming under Section 9 were not public buildings, the plans were not retained, and, consequently, were not available.

Replying to a further question by Mr. Jesson, and supplementing the answer given in the Council last week, Mr. Taylor stated that seventy-three officials in the architect's department were engaged on means of escape questions only, and not in connection with the Building Act generally.

Replying to a question by Mr. Gautrey, Mr. Taylor stated that the Committee had obtained a report from the officers as to the areas and situation of land within the County of London now unbuilt upon, to which Part 2 of the Housing and Town Planning Act might be applied. The Committee had also considered preliminary details of areas which were ripe for development, and had instructed the officers to make further investigations with respect to particular areas. It was, however, undesirable at that stage to make public the Council's intentions.

FANS AND PANELS BY MR. GEORGE SHERINGHAM.

'Tis a fascinating little Exhibition, of a nature—or, more accurately, of a quality—that produces a sensation of desire for further display, contrasting thereby so pleasantly with the many Exhibitions which promote a feeling of satiety.

On entering the Ryder Gallery in Albemarle Street we feel at once in an atmosphere of high Art; nor is this sensation at all dissipated when detailed inspection is made of this small collection of fans and panels painted on silk by Mr. George Sheringham. The subjects are for the most part self-explanatory, another pleasant contrast to many works whose interpretation depends upon the title.

It may be conceded that to each member of the public there is a special note of appeal, now here, now there; but endeavouring to criticise quite impersonally we should select as of the best the "Golden Carp," the "Golden Peacock Panel," and "The Orange Panel"; and running these close in quality are "The Grey Harlequin," the "Emerald Panel," and "The Grey Parrot's Garden." There are two distinct schools of treatment observable—the palettes of brilliancy and delicacy, or, alternatively, the Oriental and the Occidental, the former represented by the Japanese and Chinese inspiration (and more particularly by the Japanese), the latter represented by English and French flavouring. There is quite the Watteau conception in "The Grey Parrot's Garden," "Fête Champêtre," "Yellow Garden," and "The Blue Tree." In "Romeo and Juliet" (the balcony scene) the black and white treatment is silhouette in effect, whilst "Victorian Panel" is essentially English. We can but end as we began—'tis a fascinating little Exhibition.

PORTRAITS BY MISS SCHEBSMAN.

CHARLES DICKENS has informed us in the pages of "Nicholas Nickleby" wherein lies the whole art of portraiture. "There are only two styles of portrait painting—the serious and the smirk; and we always use the serious for professional people (except actors sometimes), and the smirk for private ladies and gentlemen who don't care so much about looking clever." Miss Bettia Schebsman proceeds on different lines, if her small exhibition at No. 31 South Audley Street, W., may be taken as a criterion. Yes! Mr. Landon Ronald looks tolerably serious, and Mordkin and Miss Marie Lloyd smirk at us, but the private ladies and the children are sufficiently grave in countenance.

Miss Schebsman seems to have two palettes—the one more pleasantly bright and clean, the other dull and unattractive. Of the former, first place is taken by "Miss Marie Lloyd," which, in addition to the brightness, shows a well-balanced figure and a striking ensemble; the eyes are, however, too long—too continuous across the face. The artist's portrait of her sister, Mrs. Margolis, and her auto-portrait are clean and satisfactory. Her portraits give the general appearance of being good likenesses, an excellent quality

in portraiture; they steer a happy course between the ultra-realism of John Opie and the inartistic socialism of Miss La Creevy. The portrait of Master Albert Pozner shows a well-modelled head, but the gilt chair is too pronounced. "Miss Allinah Harper" would benefit if actuality permitted the introduction of carmine into the cheeks of the prettily-painted head, with the still more prettily-painted mouth.

Miss Schebsman's alternative palette is more apparent in "Sape Unikoff," "Mrs. Claude Montefiore," and "Miss Anne Millhoff"; the last two may be bracketed together also in regard to the supposed tapestry background of large rose design; the treatment is altogether too pronounced, nor in the absence of the tapestry effect do the roses appear to represent the blossom satisfactorily. "La Malagueinta" attracts the eye, even if the spirit cannot altogether approve; inter alia, emerald-green (as witness this and the previous canvas) is not a colour to be used in bulk, and, furthermore, we shall never approve "edging-in" the figures, except for decorative design. This is an artistic solecism, introduced (we believe) by Mr. Sant, R.A., and too numerous followed by Mesdames and Messieurs les brebis d'artistes.

LIBEL ACTION AGAINST AN ARCHITECT.

FURTHER litigation arising out of the work at Sefton Park, Lord Decies' country seat near Slough, came before Mr. Justice Pickford and a jury on Tuesday, when Mr. Horace Farquharson, of North Audley Street, the architect who acted for Lord Decies, was sued for alleged libel by Mr. Albert Edward Addis, a building surveyor, of Old Queen Street, Westminster. The statement complained of was contained in a letter written to Mr. F. H. Anderson, of York, solicitor to Lord Decies.

Mr. Lewis Thomas, K.C., for the plaintiff, said an outstanding claim for £6,000 was being made upon Lord Decies by the builders, Messrs. Holland, Hannen & Cubitts, Ltd., when the plaintiff was called in by Mr. Anderson and instructed to measure the work and examine the bills sent in. Plaintiff did so, and reported to Mr. Anderson that he had discovered discrepancies which would have resulted in Lord Decies being overcharged. Mr. Farquharson, the defendant, was requested to withhold his certificate for the payment of the balance, and, said counsel, evidently became angry at the imputation upon the figures by the plaintiff's investigations. On March 27 last he wrote the alleged libel to Mr. Anderson: "I enclose list of the points Mr. Addis raised. . . . In regard to all the other items Mr. Addis queries, they are due either to ignorance or misconception. . . . I think it most unfortunate that you should have called in a man who, having been in Cubitts' employ, left the firm not of his own wish, and I can only suggest this was inadvertence on your part. It would have been much better if you had gone to a firm of surveyors of recognised qualifications and position."

Counsel said it was not a fact that the plaintiff had been dismissed from Cubitts', in whose service he was from 1897 till 1900.

For the defence, which raised the plea of privilege, and denied malice, Mr. Clavell Salter, K.C., said the measurements in question had been made by competent men, and all the objections raised by the plaintiff, with the exception of two, were regarded by the defendant as frivolous. He (defendant) had to hold the balance fairly between all the parties, and, having regard to the position in which Lord Decies was being placed, Mr. Farquharson saw no reason for withholding his certificate from the builders for the final amount.

After hearing the evidence, the jury found the statements in the letter were defamatory, and awarded plaintiff £50 damages. Judgment was entered accordingly.

COMPETITION NEWS.

CARLISLE.—Eight sets of plans have been received for the proposed new school off Newtown Road. The competition was limited to local architects, and will be adjudicated by an assessor nominated by the President of the Royal Institute.

SALE.—The Urban District Council have decided to invite architects practising within a radius of ten miles of Manchester, who are desirous of competing in a scheme for the erection of public offices, to send in their names, with particulars of work carried out by them, from which list a selection would be made by the Council.

BOOKS RECEIVED.

"Common-sense Homes." A practical book for everybody upon the essential equipment and treatment of the home. By Spencer Gills, member of the Society of Engineers, the Royal Sanitary Institute, and the Institution of Municipal Engineers. With numerous illustrations. (London: Cassell & Co., Ltd. 5s. net.)

"Gardens for Small Country Houses." By Constance Jekyll and Lawrence Weaver. (London: *Country Life*; George Newnes, Ltd. 15s. net.)

"The English Fireplace." A history of the development of the chimney, chimney-piece, and fire-grate, with their accessories, from the earliest times to the beginning of the nineteenth century. By L. A. Shuffrey. Illustrated by 130 collotype plates from photographs, chiefly by W. Galsworthy Davie, with many other illustrations. (London: B. T. Batsford. 42s. net.)

"The Properties and Design of Reinforced Concrete." Instructions, authorised methods of calculation, experimental results and reports by the French Government Commissions on reinforced concrete. Translated and abridged by Nathaniel Martin, civil engineer, A.G.T.C., B.Sc., A.M.Inst.C.E., lecturer on reinforced concrete, Royal Technical College, Glasgow. (London: Constable & Co., Ltd. 8s. net.)

"The Note-book on Architecture." By Henry James Fox, A.M.C., national medallist and prizeman. (London: J. M. Dent & Sons, Ltd. 1s. net.)

"The Story of Architecture in Oxford Stone." By E. A. Greening Lamborn. (Oxford: The Clarendon Press. 3s. 6d. net.)

"Letchworth (Garden City) and Hitchin, with their Surroundings." A handbook for North-west Hertfordshire. By the late George Aylott and W. Percival Westell, F.L.S. With introduction by Ebenezer Howard. (London: The Homeland Association, Ltd.; Frederick Warne & Co. 2s. 6d. net.)

"Public Baths and Bathing-places." By E. Harding Payne, A.R.I.B.A., past president of the London Water Polo League and the Surrey County Water Polo Association. (London: Southern Counties Amateur Swimming Association. 6d.)

"Common Battery Telephony Simplified." By Walter Atkins, Engineering Department, G.P.O. (London: *The Electrician* Printing and Publishing Co., Ltd. 3s. net.)

"The Arbitration Clause in Engineering and Building Contracts. Suggested modifications in view of recent decisions." By E. J. Rimmer, A.M.Inst.C.E. (London: Constable & Co., Ltd. 2s. net.)

"Where to Live Round London (Southern Side)," with a chapter upon the geology and subsoils, by W. H. Shrubsole, F.G.S. Edited by Prescott Row and Arthur Henry Anderson. (London: The Homeland Association, Ltd. Frederick Warne & Co. 1s. net.)

THE Building Acts Committee of the London County Council report that the provision of £1,000 made in the annual maintenance votes in respect of fees payable to district surveyors for notifying or reporting to the Council cases of buildings coming within the fire-protection clauses of the London Building Acts (Amendment) Act, 1905, and cases of non-conformity with the provisions of that Act has proved to be insufficient. The expenditure involved in respect of these duties is one over which the Council has no actual control since the duties of district surveyors in the matter are statutory. It is estimated that additional expenditure of £1,250 may be necessitated during the current financial year.

The Architect.

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STUDENTS' DRAWINGS AT THE ROYAL ACADEMY.

THIS not being a gold medal year, the prizes for architectural students at the Royal Academy are not of quite so much importance as a year ago, but the drawings exhibited are nevertheless interesting, as showing what is being done in what we may assume to be the premier school of architectural design in this country.

There are several points which ought to be borne in mind when forming an opinion or making a criticism on the work of young architects who are still students in the Royal Academy School.

In the first place the drawings are the product of evening work and, therefore, presumably of men who have already in some office done a day's work of a more or less utilitarian and, possibly, prosaic character. One cannot therefore expect the problem set in the school to be attacked with that freshness of mind and concentration of thought that should be present amongst students in day classes at the universities and the Architectural Association.

The actual working time spent each evening, after deducting from the rather short hours of the School the necessary waste in getting ready and packing up, does not allow of a very large amount of work being done at one sitting. As the problems set are usually what we may call monumental it is a long time before a design gets finished, and this probably accounts for what strikes us as being characteristic of the Royal Academy School—slovenly draughtsmanship and dirty paper, which it is the fashion to colour all over, since indiarubber and bread-crumbs would not effectually remove the grime of many weeks' labour.

There does not seem to be in the Academy School anything corresponding to the half-hour sketch, which is a feature of many educational systems in the art of painting, and we believe such a method would prove advantageous in the study of architectural design.

The aim of the School seems to be the development of completely thought-out designs, and when this is spread over a long period of time in many small doses, the paper naturally gets very dirty, hence the coloured background.

Another feature by which the Royal Academy School is distinguished from other centres of architectural training is that students appear to be allowed freedom and latitude, one might almost say license, in the conception of their designs and in the forms of detail by which they are accompanied. There is no evidence either of that characteristic *cachet* which is so prominent in other schools where architectural design is taught with presumably more dogmatic direction.

One might indeed say that in the Royal Academy School the young architect is not taught but helped to design. He is allowed to set up his own ideal, and is not expected or even encouraged to follow the traditions of the School, hence it will be found that the designs may be divided into two classes; those of the men who are content to follow where others have already shown the way, sometimes in composition but more often in detail, and those of the men who are striving to express ideas of their own in language of their own. The work of the latter it will be readily understood is far more interesting, notwithstanding that it inevitably embraces the largest proportion of failures, or at any rate want of complete success.

We notice in the case of several designs that both plans and elevations have been drawn, and presumably designed, over a series of squared lines, which suggests that there has been a determined effort at the introduction of a reasoned system of proportion as applied to present-day architecture rather than the hitherto prevalent reliance on a sense or feeling for proportion, which in the case of a young designer can hardly be expected to have attained such a degree of development as to be entirely reliable in the setting-out of a monumental building. Obviously with such a system of squares covering his blank paper the designer is led to plot his building in exact multiples of an uniform unit rather than a haphazard collection of more or less loosely related parts, and so gives a definite consideration to the proportions of the several components of his design, both in plan and elevation. We notice also that it is a common practice, at least amongst the more advanced students, to make a freehand perspective sketch in the corner of their sheet of paper, indicating that they are rightly being taught to think in three dimensions whilst they are working in planes of plan and elevation.

The principal prize of the year, the travelling studentship of £60, awarded for a design for "An entirely detached town residence for a nobleman in a capital city overlooking a public park on its west side," has been won by Mr. Oliver Frederick Savege, with a design which has more of the qualities of a residence than most of the other competitors have provided. These latter have apparently taken the view that the nobleman wanted a palace for gorgeous functions, and that his home would be somewhere in the country within a reasonable motor ride of the capital city, and they have accordingly planned with a view to spectacular effects and included magnificent halls, staircases, and salons. The winner has planned a house in which the nobleman could reside in comfort, and yet entertain with satisfaction both to himself and his guests. The elevations, if not wildly enthusing, are dignified and marked by sufficient rhythm to give a mild degree of interest to the composition, more particularly on the garden front. The entrance front rather suffers from the introduction of a *porte cochère*, which is a difficult adjunct to treat with dignity or in consonance with any attempt to design in the grand manner. The detail is not marked by originality but follows accepted precedent.

There appears to have been a mistake in the official printed list of prizes supplied to the Press and published by ourselves and our contemporaries last week. The prize and silver medal won by Mr. Charles Frederick Butt, according to the label on the wall, was for "An architectural design," and not for measured drawings of "The west front of St. Martin's-in-the-Fields, including the tower and one return bay." Mr. Butt's design was for an art gallery, and is one of those to which we have above alluded as designed over a series of squares. Mr. Butt has achieved an agreeable expression of proportion and has a good sense of detail, whilst his attempts at originality, if not completely successful, deserve commendation rather than reprobation. Another design (No. 142) for an art gallery, and so competitive with Mr. Butt's, is also an interesting example of a striving

for freshness in design. With a distinctively French feeling in composition, Sicilian-Greek Doric columns are found in the same elevation with Renaissance Ionic, and the conjunction is not altogether unpleasing, even if somewhat bizarre. The author of the design (No. 153) for a town church is also one of those who do not mean to be trammelled by an adherence to archaeological correctness of detail, and is feeling his way to originality, which, combined with the good feeling shown for proportion, promises well for his future productions.

Mr. W. H. Hamlyn's prize design for a loggia is on safer grounds, with a respectable observance of established canons of propriety, and so scores over such efforts as No. 169, whose curious dossier-entablature forming an impost to an elongated Doric column and unstilted arch, is more daring than pleasant. The designs for a domed memorial church for the most part rather allow the dome to overweight their composition, and their authors would do well, we think, to allow themselves to become imbued with the feeling of Bramante's S. Pietro in Montorio.

The measured drawings of "The west front of St. Martin's-in-the-Fields, including the tower and one return bay," by Mr. Augustus Gaffett Bryett (if the label on the wall is to be believed) are a fine set, delicately drawn and shaded. Mr. Bryett's successful architectural design with coloured decoration for "One bay of a hall for a City Company or Guild" admirably keeps up a harmonious *leit-motif* of colour through painted pictures and chromatic architecture. The perspective drawing in outline of "The east end of St. Martin's-in-the-Fields," by which Mr. Walker Llewellyn Clark wins a silver medal, is piquant by the sharpness of its visual angle, and is besides not entirely in pure outline, so that it is hard to believe that it portrays the same building as is delineated in a competitive representation.

IFFLEY CHURCH, OXFORD.

THE church exhibits some of the purest and most perfect specimens of Norman work still existing. It is supposed to have been erected either by Robert de Cheney, bishop of Lincoln, about 1140, or by Juliano de Remigio a little later. It consists of a chancel and nave, with massive embattled tower in the centre. The west front is of three stages, the lowest having a deeply recessed doorway with richly carved chevron and beak mouldings.

NOTES AND COMMENTS.

THE matter of the famous cup belonging to the church at Tong illustrates once more the urgent necessity for the protection of ancient monuments, which term includes other things besides those that are constructed of stone and brick and fixed to the soil. The parishioners of Tong are now applying for a faculty to enable them to sell their famous cup, and an offer from a "private source" of nearly £3,000 has been made for it. As the income of the living is only £110 a year, it is evident that £3,000 in cash would be more useful to the parish than the cup, which to Tong is a decided white elephant. It is not quite certain what the cup is, as one expert opinion designates it as a ciborium and probably the work of Holbein, whilst another declares that it has not been made for use in the church but was a domestic standing cup, and by the same hand as another cup in the Victoria and Albert Museum which bears the London hall-mark of the year 1611.

The Dean and Chapter of St. Paul's, with the assistance of the Surveyor to the fabric, Mr. Mervyn Macartney, have rightly again called public attention to the presumptive damage that may ensue to the Cathedral from the proposed tramway on the eastern side, and we are glad to know that the London County Council have so far departed from their previous attitude as to propose a conference between representatives of the Dean and Chapter and of the Parliamentary and Highways Committees. This conference was held on Tuesday last, when

Canon Alexander and Mr. Mervyn Macartney met Mr. Philip E. Pilditch and Mr. W. J. Squires, and the following statement has been issued by the Council:—

"A conference was held to-day between representatives of the Dean and Chapter of St. Paul's Cathedral and representatives of the Parliamentary and Highways Committees of the London County Council on the subject of the proposed tramway subway.

"The matter will be considered by the Parliamentary Committee early after the Christmas recess, and will come before the Council in due course. The Council's Tramways and Improvements Bill of 1913, which includes the proposal for the construction of the subway, cannot come before Parliament until February or March, and will not reach the Committee stage in the House of Commons until a later date, probably in April. The matter does not call for immediate action, and in any case it will be considered by the Council in January, when all the circumstances will be fully reported."

The stability of St. Paul's Cathedral is of too great consequence to the nation for any risks to be taken. The advisers of the County Council may be too confident, the advisers of the Dean and Chapter may be too apprehensive, although we do not think so, and it is therefore highly desirable that, if it be in any way possible, both parties by conference may arrive at the same conclusion—whether there is or is not the slightest risk. Tramways are not such unmixed blessings and so indispensably necessary to the community as to justify any risk being run with regard to so important a national monument as St. Paul's Cathedral.

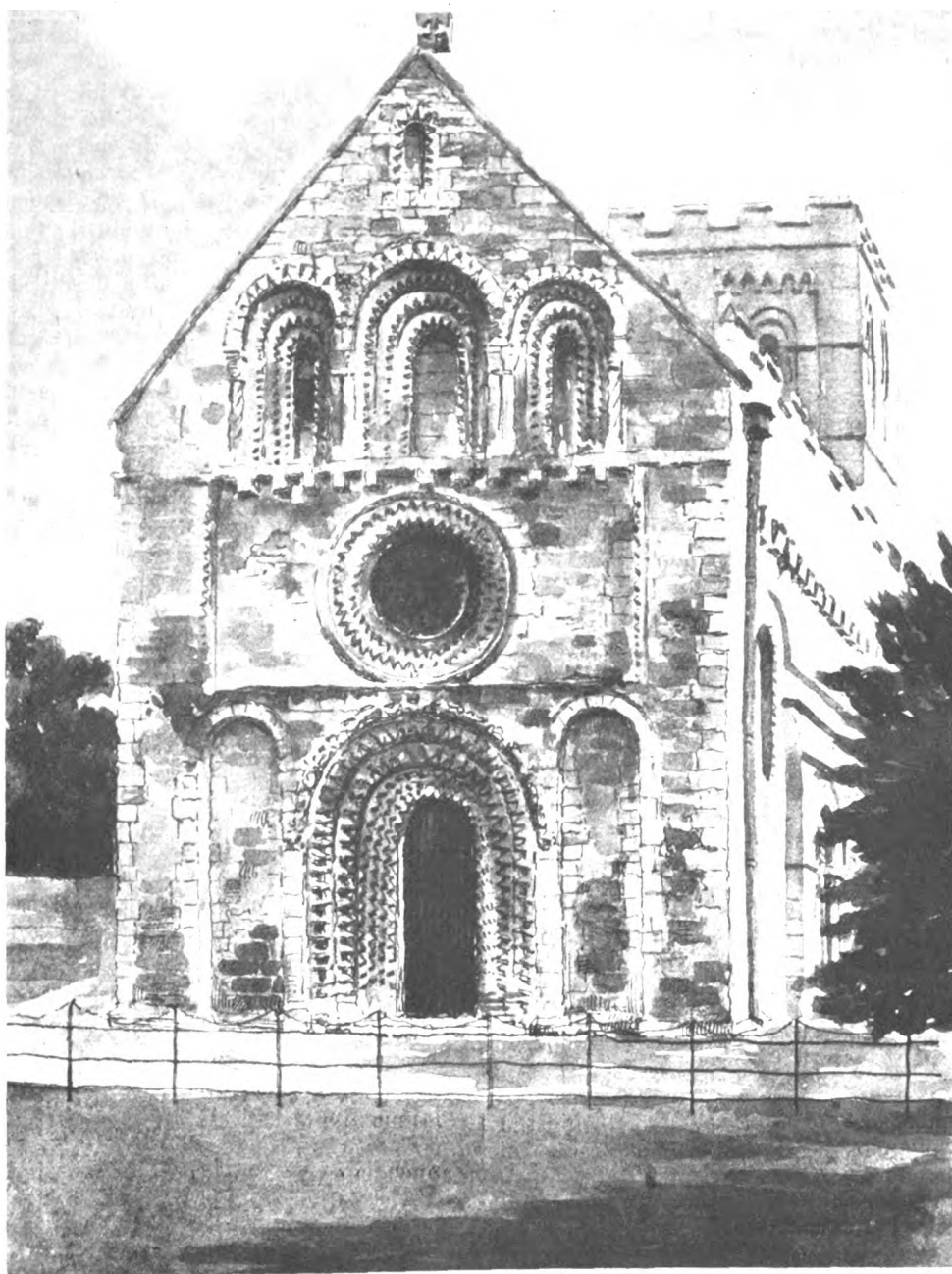
The purchase of the Jeffrey's Almshouses by the London County Council has naturally been followed by the question as to what ought to be done with buildings erected in 1715, and possessing many of the best characteristics of eighteenth-century architectural work, and the proposal made by the Local Government Committee of the Council that they should be used as a local museum for the local craft of furniture and cabinet-making is one that is marked by much sound common sense.

A museum fulfils several distinct functions; it is first a depository and storehouse for valuables and curiosities, and as such offers justification for great national institutions such as the British Museum and the Victoria and Albert Museum, but a museum should be more than this. It should be the centre of instruction, inasmuch as we are all nowadays more or less specialists, and, as such, have some particular branch of knowledge with which we desire to become as familiar as possible.

It is obvious that when certain crafts are congregated in defined areas, as is the case with many industries in London, the principle of special industrial museums at suitable centres is the right one upon which to act. Shoreditch and Bethnal Green is the head centre of furniture and cabinet-making in London, and it is right therefore that the eighteenth-century ancient monument in Shoreditch which has become public property should be used as a museum for the local industry.

The problem of rural housing has, so it is said, been given careful consideration by the Rural Housing Association, and this body has issued a memorandum expressing an adverse opinion to the scheme of State grants for providing houses for the rural population. In this they say the Housing Act of 1909 has not yet been three years in operation, while the orders and regulations issued under it have been in the hands of the rural sanitary authorities for a still shorter period, yet already a great advance in building activity is shown. This activity is constantly increasing, and is likely to become still more marked when the councils which were not among the first to build begin to reap the benefit of the experience of the pioneers. A memorandum issued in November 1912 by the Local Government Board shows that in the time—barely three years—since the Act of 1909 came into operation, loans have been sanctioned to 29 rural district councils in respect of 46 parishes, for the purpose of the purchase of lands and the erection of cottages, as

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



IFFLEY CHURCH, OXFORD.—WEST FRONT.
From Prize Drawing by "PLATO."

against 11 rural district councils in the 19 years preceding, since the passing of the former Act of 1890. The amounts of these loans may also be contrasted. Those sanctioned since December 1909 amounted to £75,561, as compared with a total of £47,060 in the 19 years preceding. At the present time (November 1912) further applications have been submitted to the Board from 17 rural district councils to the amount of £55,000. In the opinion of the Association the Act should be given a much longer trial before pronouncing it to be inadequate.

The financial difficulty in the way of increasing the supply of country cottages arises in large measure from the inadequacy of the wages of the agricultural labourer, which in many districts do not admit of his paying an

economic rent. The policy of the State grant appears to the Association to be merely tampering with the symptoms, whilst leaving the real cause untouched. State-aided housing will do nothing to raise the standard of wages to a true economic level; it will rather tend to lower them.

On the other hand, the Association is of opinion that a continuation of the present policy of the Local Government Board of promoting the building of cottages by rural district councils at economic rents would, if pursued, have the contrary tendency—namely, that of forcing wages up in those districts where they were too low to admit of such a rent being paid. If the strictest economy compatible with adequate accommodation and

sound building were practised in erecting these cottages the rent might often be kept reasonably low; and if, at the same time, a piece of garden ground were provided with the cottage, large enough for its produce to be of material value to the labourer, he might be in a position to meet the increased rent with only a moderate rise of wages.

We sympathise with the views of Mr. H. F. Traylen, A.R.I.B.A., who, in a lecture before the Sheffield Society of Architects and Surveyors on the subject of Barnack Church, made a vigorous protest against the "flaying alive" of English churches by the removal of ancient plaster in the early days of the nineteenth century Gothic revival, when it was thought to be the correct thing to clear away all plaster and whitewash and to point the interior of our village churches with black mortar joints. The enthusiasts of the time failed to recognise that the plaster was in many cases contemporary with the masonry and intended by the first builders as a natural completion given to their rubble stonework.

Professor Selwyn Image has emphasised to his students the importance of thoroughness in technique and craftsmanship, and pointed out the marked difference between the half-hearted practice of some amateurs and the devoted application of those who give long time and service to the mystery of the craft they take up. He said it had, unfortunately, come about that a great number of people with a certain capacity for arts and crafts had set themselves to dabble in them—sometimes charmingly, yet still to dabble—without having the patience and modesty to learn the practical business of them. Then other people, without perhaps much, or any, sense of art in them, but with unquestionably a great deal of practical skill in certain kinds of crafts, had come along and smiled or scoffed. "Very pretty, very well-meaning," they said; "but look, my friends, the fellow does not know his business as a craftsman. Really this would not pass in any decent trade workshop. It only makes pretence of passing with those who do not know by a catch-penny exterior."

NOTES ON BOOKS.

"The Land Union's Handbook on Provisional Valuations." Being general advice to owners of land and house property in dealing with valuations under the Finance (1909-10) Act, 1910, as amended by the Revenue Act, 1911, with statutes and forms. (Published by Vacher & Sons, Ltd.)

The original MS. for this handbook was prepared by Mr. Ernest Watson, F.S.I.—an assistant secretary of the Land Union—for private publication, but the Executive Committee of the Land Union, realising the importance of issuing to its members a practical guide to dealing with provisional valuations, thought it desirable to acquire the rights of publication, and to issue it, with considerable additional matter added by the Literature Committee, as a handbook, subject to revision by some members of the Legal Committee.

It is not intended as a technical legal handbook, nor can it take the place of professional advice on the complicated points of law raised by this new legislation. But it states as simply as possible the main features which property owners ought to understand, and the direction in which they should move if they desire to protect their interests. The subject matter of the Act is so novel and so complicated, and so many interpretations still remain to be decided in the Courts, that opinions now given may subsequently require modification. The Land Union claims to have a unique experience in advising its members on valuations and in contesting claims before the referees and the Courts. Professional men will also have to have experience of this character, and this handbook should be of use to them.

The Finance Act, 1910, imposed altogether five new burdens upon land and house property (including in

the latter expression business and manufacturing premises of all kinds), viz., Increment Value Duty, Undeveloped Land Duty, Reversion Duty, Mineral Rights Duty, and Increment Value Duty on Minerals. A short description of each of these will be found in the chapters, with notes as to their incidence, the exemptions therefrom, and other points of interest.

Many provisional valuations are being sent in which are not based upon proper information. Yet if not objected to within 60 days they, however incorrect, will be fixed for ever. It seems, therefore, desirable to put in notice of objection whenever doubt exists as to the correctness of the figures wherever the owner's knowledge of law or fact is insufficient to enable him to arrive at an immediate decision.

It will undoubtedly be to his advantage to call in the aid of an experienced unofficial valuer with a good knowledge of the Act itself, without which knowledge the position of the valuer and client must resolve itself very much into one of "the blind leading the blind."

Owners should bear in mind that many of the most debateable points in the interpretation of very important sections of the Act are still unsettled and await the result of test cases before referees and the Courts of Law.

It is hard to see that anything is to be gained by being in any hurry to conclude a settlement. And if these considerations ought to weigh heavily with the minds of absolute owners, still more should they be remembered by trustees, executors, solicitors, and surveyors, acting for other parties. The position of those acting in any of these representative capacities is very delicate and difficult in view of the dangerous pitfalls which lurk in the Finance Act.

Rules for procedure in cases of appeal have been drawn up by the Reference Committee under the Act. These are necessarily somewhat technical and complicated, and in all cases where an owner decides to appeal to a referee and thence, if necessary, to the Courts, legal advice should be taken so that he may not prejudice his case, or be non-suited on account of any mistake or omission in procedure.

The Increment Value Duty is ostensibly a tax of 20 per cent. on any increase of value (not created by the owner) which accrues (after April 30, 1909) to the value of the site or any land (whether built on or not) over and above the original site value.

Owners should therefore be at great pains to see that the values fixed are the values as at April 30, 1909, and not the values at a time when prices are unduly depressed whether by political or investment conditions.

Another point which has lately come into unexpected prominence is the question whether what is called a "Minus Site Value" is legal.

The importance of checking all these valuations cannot be exaggerated, having regard to the fact that in all future cases of sale, the granting of leases, or underleases for more than fourteen years or on the death of the owner, an "Occasion for imposing Increment Value Duty will arise, whether the interest dealt with or passing is freehold or leasehold, a sale or lease of building land or of houses or business premises."

The question is frequently asked: Is it advantageous to the owner that his property should be valued high or low? A careful consideration of the Act and the purposes for which the "valuation" may be used, or can directly or indirectly be brought now or ultimately to bear on the owner's interests, convinces the Land Union of the continued soundness of the old adage that "Honesty is the best policy." For instance, the over-clever man may bethink him that a low total or market value may best suit him, having regard to his age and the increased Death Duties, but seeing that his death will be an "occasion" for the re-valuation of his property, not only for Estate Duty but also for Increment Value Duty, the Land Union consider that he should judge whether the studied depreciation of his property may

not result in a levy of 20 per cent. in the form of Increment Tax, while in no way lessening the amount of Death Duties imposed. This argument would not, of course, apply to purely agricultural estates, as such are free from Increment Value Duty, but would certainly apply to all other forms of business and residential property, and particularly to land having a potential building value. Even in the case of purely agricultural properties it must be borne in mind that land can now be compulsorily hired or purchased by County Councils for the purpose of small holdings, and that although the valuations are at present not available for use in connection with such matters, the time may come when these valuations will become common property.

All these and various other important and technical matters are thoroughly dealt with in this handbook, which is interesting reading and will give valuable assistance to anyone who has to consider the questions arising under this Statute.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A MEETING of the Royal Institute was held on Monday last, the 16th inst., at their premises in Conduit Street, W., Mr. Reginald Blomfield, president, in the chair.

It was announced that the Council, in the exercise of their discretionary powers, have admitted the South Australian Institute of Architects into alliance with the Royal Institute.

After some preliminary business, Mr. Horace Porter, M.A. Cantab, A.R.I.B.A., read a paper, which was fully illustrated by lantern slides, entitled:—

The Walls of Visby.

The island of Gotland is a low-lying plateau of limestone rock, some seventy miles long by thirty-five in breadth, in the middle of the Baltic Sea. The nearest land is Sweden, and with Sweden its history has been linked more or less closely from the ninth century. The island has been a part of the Swedish kingdom since 1645, and during the last two centuries the modern little town of Visby has come into being among the ruins of the past. Only a quarter of a century ago there were fields to be ploughed within the circuit of the city wall.

Of the thirteen or more churches which formerly stood within the city walls, one (the cathedral church of St. Mary) is still in use, and the ruins of nine others are ranged close together in the centre of the town, while along the ramparts thirty-eight towers and bartizans have survived out of the original tale of over fifty. Very striking is the impression which these towers produce as you approach the town. It is the Queen City of the Baltic that confronts you, the Visby of the thirteenth century, during which those ramparts grew up together with the fame that rose so rapidly and died down again so soon. The walls were not raised, in the beginning, as military fortifications round a military stronghold, but were designed first to assert, and later to safeguard, the power of a merchant city.

The fame of Gotland has become eclipsed by that of its one city, yet the island was an important centre of commerce long before the name of Visby had been heard. By the end of the tenth century Gotland had come to be the chief mart for all the important trade of Northern Europe with Russia, in the first place, and through Russia with the East. It was natural that the foreign merchants should desire some special protection for their valuable wares. The best anchorage for their ships they found on the west coast, under the shelter of the most famous "Vi," or place of sacrifice, of Gotland's heathen days, a rock platform close to the shore and raised some 100 feet above it.

As early as the twelfth century the merchants had special privileges granted them by the Emperor Lothair, and organised the first beginnings of the great Hanseatic League, in which Visby was for a while the leading city. In the thirteenth century this "Venice of the North" reached the zenith of its wealth and power. To it belongs the history of the Visby ramparts, which may be divided, for convenience, into three periods, coinciding more or less with the beginning, the middle, and the end of the century.

I.—FIRST PERIOD.

By the end of the twelfth century it is evident that Visby has already reached a high degree of prosperity. Unfortunately, that prosperity meant loss to the rest of Gotland,

where no separate township had formerly been recognised. The island as a whole had been the unit of social life, and free trade had been practised in its fullest form, native and foreign merchants alike living and trading where they chose. But only those Gotlanders who were established at Visby were allowed to share in its life and privileges. The rest found their goods taxed and themselves shut out from its markets, as much by its exclusive laws as by the wall with which, at the beginning of the thirteenth century, the town was enclosed.

Only a wall of moderate height was built at first, varying from 15 to 18 feet. The masonry was squared, uncoursed rubble of local limestone, the lower part being built with very large stones. It was finished at the top with wide battlements, alternately plain and pierced with a loophole.

The line of this enclosing wall seems to have been determined by the ridge of rock running parallel with the shore whereof the "Vi" formed the southern extremity. It is built along the edge of this ridge, on the landward side, and down the slope to the sea at the north and south ends of the town. Along the sea-front it followed what seems to have been the old line of the shore for a distance given as 1,950 yards. The three landward sides are estimated at 2,400 yards, making a total circuit of 4,350 yards. A considerable portion of the south and west walls has disappeared, but the rest of the line remains standing, with only a few breaches.

Three buildings, at any rate, along the ramparts seem to have been in existence before the wall was marked out. These are the square, solid fortress, now known as the "Powder Tower," down by the sea; the so-called "Mint House," and a remarkable building between the east and south gates, evidently deserving of a worthier title than the "Tjårhof," or tar-factory, by which it is now distinguished. Six other buildings seem to have been erected together with that first city wall, and they are all ranged about the south-east end of the rock ridge, which formed the first focus of the town.

At the completion of this first period, then, we have the old merchant settlement developed into an independent and alien city, enclosed by a low wall, into which perhaps nine towers and other structures were either built or incorporated, chiefly round about the south-east plateau.

II.—SECOND PERIOD.

To the Gotlanders outside the pale of Visby the enclosing of the town was a bitter affront. In the year 1288 their hostility was organised into open warfare. Long before that date the rich burghers must have realised the possibility of an attack upon their usurping city. Accordingly, they set to work to fortify the most important positions along the wall at no very long time, probably, after its completion. This second period in the history of the ramparts may be placed, roughly, at about the middle of the thirteenth century, a time of great building activity within the city. Some fine church work belongs to this period, notably the greater part of the beautiful abbey church of St. Karin.

As already mentioned, the towers which seem to have been erected together with the wall stand round about the important south-east rock plateau, which seems to have been the original heart of the town; and it is interesting to note that the six which, from details in their construction, may be placed in the second period are ranged along the remaining section of the east wall. This would be the part upon which attention would next be concentrated for defence against an inland foe; and the two towers which give the impression of being the earliest built along this stretch occupy the two most commanding positions, at angles in the wall, at either end of a slightly projecting platform of rock, and are especially fortified.

The towers themselves are constructed on the plan adopted with the majority of those added later, as projections outside the rampart. They are open towards the town, and present, on the outside, a rectangular base up to the lower level of the battlements, or about 13 feet above the ground. Above that level the walls are carried up as five sides of an octagon, the change in form being effected by cutting off the external angles with *broaches* sloping sharply back against the diagonal faces. Each face is pierced with narrow embrasures, one above another, and access to the different levels, on the inside, was evidently obtained by means of wooden floors and ladders, the sockets for which can still be seen.

The growing anxiety for the safety of the town also found expression in the building of gateway towers over the east and north entrances.

III.—THIRD PERIOD.

The third, and in some respects the most interesting, stage of the rampart building comprises an immense amount of work done within a comparatively short space of time. Popular tradition places it in the last decade of the thirteenth century, after the open attack upon the town in 1288, when the peasant force was met by the better-armed burghers at some distance from Visby, and was routed with heavy loss.

The work done to the ramparts during this third period comprised the raising of the city wall and the addition of forty or more new towers of various types. They are all open on the inside, with the one exception of the north-west corner tower.

The most remarkable feature of this later work is the type of balcony tower, or bartizan, evolved in the raising of the ramparts. These "saddle" or "hanging" towers, as they are termed locally, are peculiar to Visby. They were added as further defences midway between the taller towers (i.e., from 120 to 140 feet distant from these, on either side), and must originally have been about twenty in number. But only eight now remain, the rest having fallen down—in most cases bringing the wall with them—owing to their unusual method of construction.

This is aptly described by their popular name of saddle-towers, their side walls being perched across and astride of the raised rampart for some six feet above the summit of this. They are carried about half-way down the wall on either side, and rest upon large stone corbels. Like the other towers, these "saddles" are open at the back, and the battlemented face is supported by a wide arch built against the rampart wall. The effect is extremely picturesque, but the strain on the wall seems to have been excessive. So far as one can judge, all those that have come down have fallen outside the wall, and their tendency to do this is shown by the fact that two of the remaining eight are buttressed up from the outside. Two of them fell in 1842 and 1866 respectively, making great breaches in the wall.

IV.—VISBY'S FALL.

The beginning of the fourteenth century found Visby at the zenith of its wealth and fame; the Queen City of the Baltic, guarded by its formidable circuit of rampart walls and towers. In appearance these would seem to defy all comers, and it is one of the ironies of Visby's history that they proved so useless when the robber King Valdemar of Denmark made his raid upon the treasure city in the year 1361.

The Swedish King Eric wrote twice to the Visby burghers warning them, but they seem to have reckoned themselves safe behind their splendid ramparts, and all active efforts to repel the invading army were left to the despised country folk. The Gotlanders had not lost their courage, and they mustered in force to meet King Valdemar when he landed on the island at some distance from Visby. They were utterly routed, but made another gallant attempt to stop his progress a little further on. Again they were defeated, but once more they gathered themselves together for a final stand on the broad plain overlooked by Visby's southern wall. The burghers, who must have witnessed the ensuing slaughter, made no attempt at holding the walls so elaborately prepared to stand a siege, but opened the south gate to admit the conqueror. King Valdemar's answering insult was to have a breach deliberately made in the wall for his entry, in token that he came by force of arms.

The robber king's sack of the town seems to have been as thorough as he could make it. Gold and silver from the merchants, and jewels from the churches (including the famous carbuncles from St. Nicolaus) were gathered together by his men in barrels-full, so the story goes; and when he took his departure, at the end of a month, he claimed the whole of Gotland as his own possession.

There was no lasting peace or prosperity after that for the merchant city. Denmark and Sweden fought repeatedly over so rich a prize, and their kings looked upon it as a mine of wealth to be drawn upon at need.

All through the fifteenth century Visby was gradually losing its position in the world of commerce. Fresh trade routes were being opened up, and Gotland was no longer the centre that it once had been. From being the leading city in the Hanseatic League it descended to being first only in one of three groups, and this distinction in turn was challenged by its rivals. The rising town of Lübeck, in particular, was resolute in its persistent attacks upon Visby's pre-eminence, and gained justification when the lords of Visby Castle began to plunder Lübeck vessels.

The Lübeckers took the law into their own hands and boldly attacked the city that had once been the glory of their merchant league. They landed to the north of the town and broke through the walls near the north-west gate, plundering, burning, and destroying houses and churches, and laying siege to the hated castle.

This time Visby had no power to rally, and when peace settled down once more it was the peace of extinction.

Visby Castle was later destroyed, and the stones used by one of the Swedish kings to make lime for his new palace; but the ramparts and most of the churches were left alone for rack and ruin to do their worst until recent times, when very intelligent care has been given to their preservation.

Mr. Axel Haig, in proposing the vote of thanks, said he was a native of Scotland, and in that capacity he could confirm every word which Mr. Porter had told them. He had known the place ever since he was a boy at school there, and he remembered how they used to hear at times terrifying noises which on the next morning proved to be caused by portions of the town wall falling. Even as boys they had been sorry at it happening, although they lacked the knowledge and sympathy they had now. In the seventeenth century King Charles XI. of Sweden wanted lime, and to obtain it he removed many of the stones of a picturesque and strong castle built by King Eric. At about the middle of the western wall a castle was built by a prince as a residence for use while in the district; but of this, unfortunately, only a portion of the walls is left in one of the burgher's houses. Some years ago he, the speaker, had made a picture called "Towing in the Prize," which represented a sea-robber bringing in to Visby Harbour a rich merchant vessel. Mr. Porter had taken them over nearly every yard of the walls; but he personally would like to hear the whole thing all over again.

Mr. Geoffrey Lucas told how when he first set eyes on Visby last July he was in a bed-less and hungry condition, and the walls certainly looked to him then like those of an enemy. He had been landed about 5.30 in the morning, and could not get accommodation in the hotel, so he had to wander about until 8 a.m., when he was told he could have a room. This he proceeded to do, finally coming to a nice hotel near the south end, where he was able to obtain refreshment and also to enter into conversation in English with two soldiers who had just come in from a botanising expedition. Really he had had no right to be on Gotland at all, as he was an R.I.B.A. student sent out to study modern work. Not only the walls, but the town itself is fascinating; it is laid out on a slope, its narrow streets have pantiled-roofed buildings, the blue sea lies just at the foot, and over all was, at the time of his visit, the blue sky and sunshine. The churches are most remarkable and interesting; they would certainly repay a good deal of careful study and reveal aspects of mediæval art with which we are not acquainted in this country. The walls themselves are, so to speak, amateurish, and convey the impression that they protected a rich mercantile city rather than as surrounding a fortified town. One does not find very great science, for instance, in the disposition of the towers compared with what is to be seen in the fortified cities, say, of France. The moat or ditch had not been mentioned by Mr. Porter, though it was an immense one. There could be no doubt that the inhabitants relied on this to keep invaders from reaching the bottom of the walls. One need not be surprised that Visby is the only large town on Gotland, because in Sweden itself the towns lack the importance they have in England, which has for its size nothing like the proportion of small land-owners. There was, he might add, a lot of charming and interesting mediæval work to be found in Sweden.

Professor Beresford Pite said he would like to venture to express the peculiar delight it was for them to see their dear old friend, Mr. Axel Haig, that evening. The Institute recognised in him a very distinguished Scandinavian. The subject dealt with by Mr. Porter was a very interesting one, though it was scarcely artistic—unless in a wide sense of that word. There was very little art about such walls if stripped of their few ornamental details round doors; they were all much of a muchness. Nevertheless, there existed a very great deal of fascination about them. For one thing, the visitor wants to know how the machine worked. Perhaps the most enlightening series of articles on this subject was that by Viollet-le-Duc, in his *Dictionnaire Raisonné*, which makes everything clear. Burges thoroughly understood the fascination of this class of building, and his extraordinary reconstruction of Cardiff Castle shows us

perhaps what Visby looked like when in fighting trim. Such fortifications were not much value architecturally; their main lesson was entirely in the directness and purposefulness of the whole thing. It meant wall and defence. In this country York was very interesting, as it was possible to walk round the whole of the top of the walls and form a fair idea of how it worked. Then he would like to remind Londoners that they had in their midst a living fortress, and one which was a very unusual example of a mediæval fortress being still used for the purpose for which it was erected a thousand years back. When he was working in a City office he used to go during luncheon-time and sketch on the walls of the Tower of London. There was one broad and general distinction between Continental fortified towns and our own, and it was that the former were independent and had to defend themselves against their neighbours as well as against a common enemy.

Mr. C. Fitzroy Doll remarked he had been reminded that it was just forty years since his voice had been heard in that building. What interested him about the walls of Visby was the things that had happened there. Within those walls was germinated and there grew up the Third Estate. It was to Visby the merchants went where they could be on an island and protect themselves against those hordes of robbers which existed throughout the whole of Germany, and especially in the North. In the church of St. Mary there was deposited the chest of the Hanseatic League. To the Teutonic mind, indeed, Visby was as great as Rome was to the Italian. The organisation which there started was stretched far and wide. There was not the slightest doubt that the whole of the municipal government of London emanated from that beginning. In the London Guildhall there were all the documents to show this. They even gave us our money and the word "sterling," which came from the family of the Esterlings. Another Hanseatic institution was the steelyard, which was conducted in London almost with the dignity of an Oxford or Cambridge College. He might confess that it had been the ambition of his life to find time to write something which would show the influence of the Hanseatic League, which was almost incredibly great. He wished some young man in the profession would go to some of these Hanseatic cities and study their buildings. They were the most picturesque towns imaginable; and it should appeal to every Englishman to see the country from which his forefathers came.

Mr. Reginald Blomfield, the chairman, in closing the discussion, remarked that though the old German towns were immensely interesting, he could not agree with the suggestion that students should go there to study art. In his opinion a student should go to the headquarters of Gothic or Classic architecture in order adequately to study it. As Professor Pite had pointed out, the subject of the study of the development of military fortification was extremely interesting. They had all listened to a most delightful paper.

The vote of thanks was then put to the meeting and carried by acclamation.

Mr. Porter having acknowledged the vote of thanks the meeting terminated.

FRENCH RENAISSANCE ARCHITECTURE.—X.

THE tenth and final lecture of the valuable course of lectures on "The Architecture of the Renaissance in France," which have been completed by Mr. W. H. Ward, M.A., A.R.I.B.A., at London University, Gower Street, W.C., was chiefly concerned with Classical church architecture.

In his earlier lectures Mr. Ward had pointed out the reasons which militated against the period under consideration being a great church building age. He also showed in some of the earlier lectures examples of church building in the sixteenth and early seventeenth centuries, in which Renaissance elements enter into the composition of the elevations, though the plan and structure cling to mediæval traditions. In his concluding lecture, he traced the course of development which took place from the adoption of purely or mainly Classical systems of planning and structure.

In the main, said Mr. Ward, the architects of Classical churches in France confined their attention to two types of plan, which may be designated the basilican and the radiate, both of which make their appearance in the middle of the sixteenth century and continue in use till the Revolution, after which no important examples of radiate plan occur. In addition to these two types there are some examples which do not strictly belong to either, but make a sort of compromise between the two.

The basilican plan consists of an elongated rectangular

nave, generally terminating in an apse. Aisles and transepts with subsidiary apses are also often included, and the plan generally forms some sort of Latin cross.

The radiate plan starts with a central space covered by a dome, and should, in its perfect form, have equal arms, and take the shape either of a Greek cross or of a regular geometrical figure, such as a circle or polygon. This, however, is rare, and we more often find the plan more or less truncated in one direction, or with one or more arms considerably extended, so that an approximation to the basilican plan is reached.

Again, we find examples of the basilican plan, in which a dome is included at the intersection.

Perhaps the earliest non-Gothic plan in France is seen in the Mausoleum chapel built by Diane de Poitiers about 1560 just outside the gates of her château of Anet. The façade is likewise the earliest example of a church front composed on definitely Classical lines.

After Henry IV. was established on the throne one of his measures for conciliating the Roman Church was the recall of the Jesuits, who set to work to build churches and colleges in many parts of France. They brought with them their own architects and their own type of church, which was based on that of their metropolitan church in Rome, the Gesù, designed by Vignola, with a front by Giacomo della Porta. The first complete example of the typical façade treatment is the very monumental one added by Salomon de Brosse, the architect of the Luxembourg, to the Gothic church of St. Gervais in Paris, which the Jesuit church of St. Louis in the Rue St. Antoine closely follows, though with more florid ornament.

One of the most beautiful specimens of church architecture under Louis XIV. is the chapel at Versailles, the fifth and final one built in the history of the palace. The usual type of private chapel in castle or château was a nave terminating in an apse, repeated on two storeys, the upper floor for the king or lord and his guests, the lower one for the servants. At Versailles Mansart adopted the same scheme, but made important alterations. He added an aisle, which runs round the apse, and threw the upper and lower naves into one.

Even in the first half of the sixteenth century some examples of domical design occur, carried out more or less in the style of Francis I., as, for instance, the chapel of All Saints in the cathedral of Toul, built about 1540. A few years later Philibert de l'Orme was experimenting with domical design. The Valois Mausoleum at St. Denis must have been an example of that ideal architecture which was the outcome of that desire for perfectly pure, perfectly regular and symmetrical forms, which was one of the principal aims of the Renaissance. It was designed by Primaticcio, and begun in 1570, but never completed. By 1719 it had become ruinous, and was pulled down by the Regent Orleans. The stone dome was covered by a timber one to give dignity externally, the first instance of such a use in France, where it afterwards became general.

The chapel of the Salpêtrière, an asylum for aged poor, built about 1660 by Liberal Bruand, the architect of the Invalides, is an extremely complete instance of radiate design expanding into a Greek cross. The central dome space, which is octagonal and 65 feet in diameter, is surrounded by four oblong arms, between which are four octagonal chapels.

Two of the noblest churches of the seventeenth century built in Paris, though very similar in the treatment of their façades, their interiors and domes, differ in their plans, which are both intermediate forms between the radiate and the basilican. They are both churches of institutions, the Sorbonne and the Val de Grace. At the Sorbonne the church was placed in the centre of the college, and was planned by Le Mercier in such a manner that the dome should be in the axis both of the façade and of the inner courts. It thus stands in the centre of the church, and the plan of the latter may be described as a Greek cross with two arms lengthened till it is almost basilican. An almost unique arrangement and not calculated to give the best effect internally, since the dome space cannot dominate the whole interior as in a radiate plan, nor be the climax as in the basilican. At the Val de Grace the dome rises from a square block, which, if complete, would have contained a circular dome space surrounded by four apses and with circular chapels in the angles. The western apse, however, was replaced by a basilican nave. Though the arrangement is not a perfect one, the effect is good, for the light and spacious dome space with its apses form a fine culmination to the dignified nave. The chief defect of the design in

both these churches is the very unsatisfactory manner in which the inner and outer domes are related to one another. In both cases the outer dome has to be raised so high in order to dominate the church roofs that it becomes a matter of difficulty to make the outer windows correspond with the inner, with the result that both are more or less of a sham.

The manner in which this difficulty was overcome in the last great church of the seventeenth century by Jules Hardouin Mansart is not the least of its merits. Indeed, the arrangements of the dome differentiate the Invalides Church from all its predecessors. The roofs of the arms and chapels being kept low, it was possible for the outer and inner domes to be at the same level, and for large windows to be provided in them. There was a third intermediate stone shell, almost the whole of which is visible through the wide oculus of the inner dome, and is purely decorative. This dome has points of similarity with the one great ecclesiastical edifice of the eighteenth century—the Pantheon. The later church has many undeniable beauties, much scholarship, and great dignity; but it is the forerunner of the break up of the long line of Renaissance styles in France. It is marked by the pushing of archæological classicism too far, by the abandonment of traditional methods of composition, and that frigidity which is one of the main characteristics of the art of David and Canova, and of so much of the architecture of the Empire.

The concluding part of Mr. Ward's lecture was devoted to a brief recapitulation of the main preceding ones illustrated by slides of buildings typical of each period.

LONDON COUNTY COUNCIL AND PREVENTION OF FIRE RISK.

THE inquiries concerning the administration of the London Building Acts were advanced a stage further at Tuesday's meeting of the L.C.C., when Mr. Jesson asked the Chairman of the Building Act Committee how many notifications had been presented to the Committee from district surveyors, and what had been the cost to the Council of those reports? How many of those notifications had not yet been acted upon, and for what reasons? Did the Chairman of the Committee dispute the figure given by the Council's architect, Mr. Riley, before the House of Commons on the General Powers Bill, 1912, that the Council had received from district surveyors notifications of 48,566 buildings that required attention under Sections 10 to 12 of the Building Act, 1905?

Mr. Andrew Taylor (Chairman of the Committee) replied that the number of notifications received from district surveyors was 55,326, for which £20,156 12s. 6d. had been paid. The Act of 1905 placed the burden upon the owners of carrying out the work, and did not provide for any preliminary action by the Council. The Committee, however, on March 5, 1906, decided to forward letters warning owners of property of their liability, and 24,907 such letters had been sent. In respect of 2,985 notifications no action was necessary. The form of letter decided upon in 1906 also invited owners to seek exemption, and of the 5,000 buildings, the owners of which had responded, 4,500 had been dealt with by requiring structural alterations or granting conditional exemption. Discretion was given to district surveyors to pass buildings which were in conformity with Sections 10 and 12. The action taken under this discretion and that of the Council had resulted in 6,286 such buildings being brought into conformity with the Act. The figure of 48,566 represented the number of notifications of nonconformity with Section 10 (projecting shops) and Section 12 (buildings requiring access to roof), which had been received from district surveyors.

Mr. Jesson supplemented his question by asking if communications had been received from various organisations who had members working in buildings not considered safe, urging the Council to get the buildings put into a proper state as quickly as possible?

Mr. Taylor replied in the affirmative, and added that the Committee was taking the whole matter into careful and serious consideration.

THE NEW COUNTY HALL.

The Establishment Committee reported that they were in a position to ask the Council to proceed with the erection of the superstructure of the new County Hall, and recommended that tenders be invited from selected firms.

Mr. St. John Morrow objected to tenders being obtained only from selected firms, on the ground that many firms perfectly competent to do the work would be excluded. If a

similar procedure had been adopted in connection with the designs for the building the accepted design of Mr. Ralph Knott could never have been submitted. He moved the reference back of the recommendation.

Mr. Howell Williams seconded. He believed, as a matter of fact, many London builders would object to tender at all for the new County Hall, but into the reasons for that he would not enter.

The motion to refer back was defeated, and an amendment providing that the joinery and stone work, except granite, should be prepared within a radius of 20 miles from Charing Cross, was accepted.

Mr. Salmon, Chairman of the Committee, stated that the selected list included 14 London firms and four country firms.

ILLUSTRATIONS.

SOUTH PORCH, CHURCH OF ST. ANDREW, BISHOP AUCKLAND, Co. DURHAM.

ST. ANDREW'S CHURCH, as it at present exists, is of one date, and may be ascribed to the early part of the thirteenth century. The porch, with parvise over it, is a most interesting feature of the church. It is covered by two bays of quadripartite vaulting, divided by a transverse vaulting arch, which springs from slender shafts placed against the side walls. These have moulded capitals and bases. The vaulting ribs spring from the same shafts and from corbels in the corners of the porch. The parvise is reached by a newel stair, which projects from the west side of the porch at its north end. This and another porch with parvise over are the only two which occur in the county of Durham. The drawing, by "Alpha," was submitted in the monthly competitions of *The Architect Students' Sketching and Measuring Club*, and was awarded a prize.

HOUSE AT MISSENDEN.

THE house is built on rising ground overlooking the valley, and sheltered on the north-east by a small wood. The walls are built in local multi-coloured bricks, and the roofs covered with brown tiles. The large sitting-room hall has an open pitchpine beamed ceiling and a tile and brick chimneypiece. There are four bedrooms on the first floor. Messrs. Geo. Biggs & Sons, of Great Kingshill, were the builders, and Mr. Ernest G. Theakston, Lic.R.I.B.A., the architect.

THREE CROWNS P.H., HIGH STREET, NORTH WOOLWICH.

THE days of the gin palace are now passed, and the future public-house will be a picturesque building of quiet design in as refined a manner as the surroundings will permit. The Three Crowns public-house, High Street, North Woolwich, having for structural reasons to be rebuilt, was used by Messrs. West's Brewery Co., Ltd., as an experiment on these lines, and their instructions to their architects, Messrs. Lovegrove & Papworth, were to design the new building so that it should suggest its waterside position, being somewhat similar to the old riverside licensed houses of the Dickens period, and at the same time be as unlike the usual "pub." as possible. The licensing justices evidently approved these instructions, as when passing the plans they laid particular stress on the necessity of following the perspective sketch reproduced, and the work is now about to be started.

The buildings are extensive, although the frontage is not great, and comprise a large billiard saloon in rear, while on the first floor will be large and small dining-rooms, with kitchens, servery, &c. These rooms are also designed so that they can be converted in a few minutes into a suite suitable for Masonic purposes.

The general contract has been let to Messrs. John Greenwood, Ltd., of Little Arthur Street, London Bridge, the steelwork to the Aston Construction Co., Ltd., the ironmongery and fittings to the Albion Iron Co., and the glazed terracotta facings to Messrs. Doulton. The whole of the joinery, including the shop front, will be in teak, as the Brewery Company finds the extra first cost is quickly reimbursed by there being no necessity to paint. The cost of the building is at the rate of 9d. per cubic foot.

QUEEN'S TOWER, TRINITY COLLEGE.—PROVOST'S COURT, KING'S COLLEGE, CAMBRIDGE.

THESE drawings were made by Mr. E. H. Gibson during his tour this year as holder of *The Architect Travelling Studentship*.

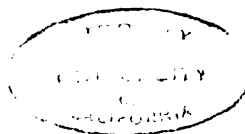
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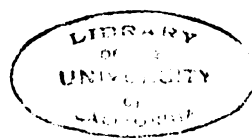
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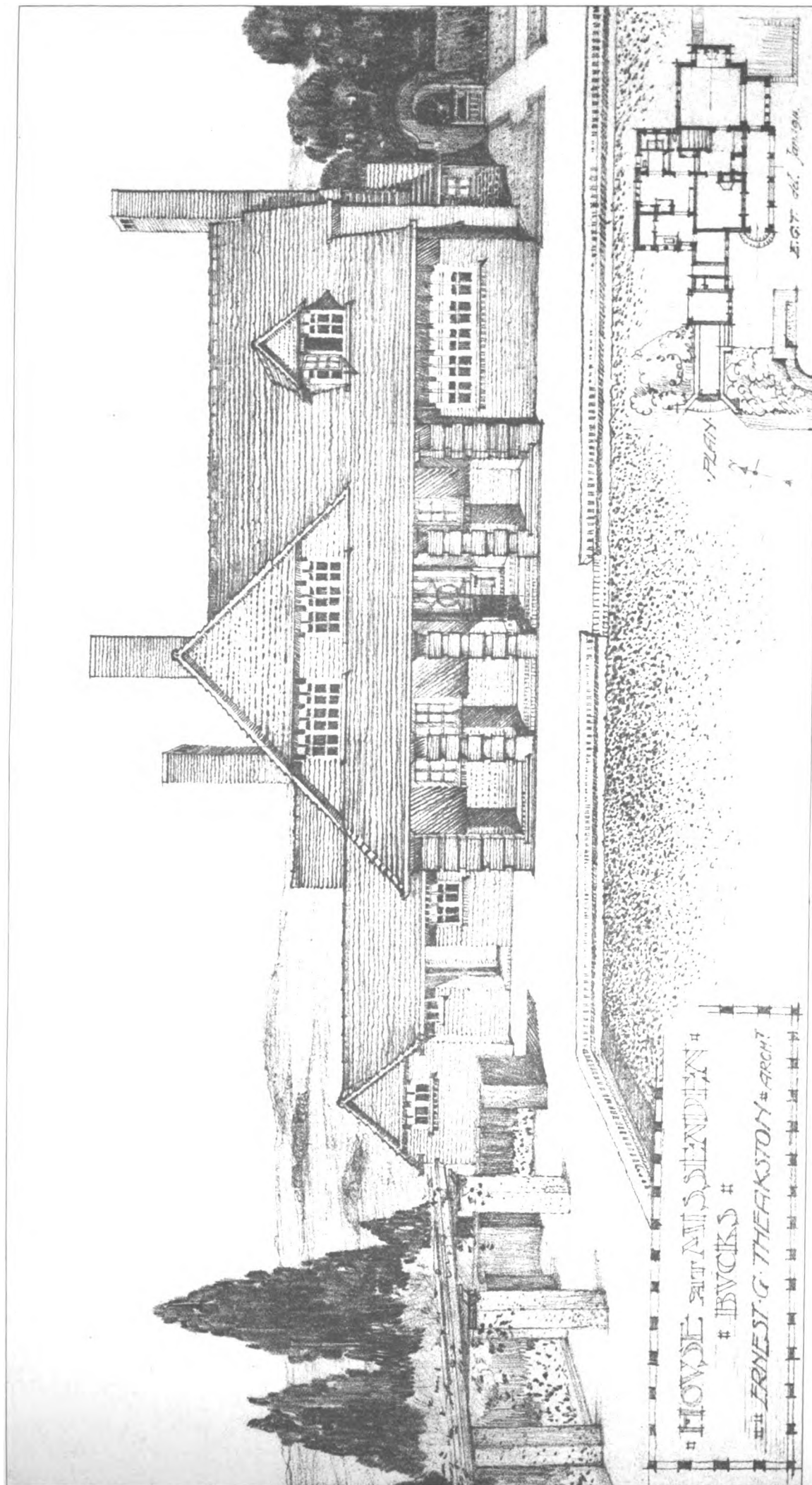




QUEEN'S TOWER GATEWAY, TRINITY COLLEGE,
CAMBRIDGE. (FROM THE GREAT COURT)
E. H. GIBSON. August. 1912.

INK-PHOTO SPRAGUE & CO. LTD 69 & 70, DEAN STREET, SOHO, W.



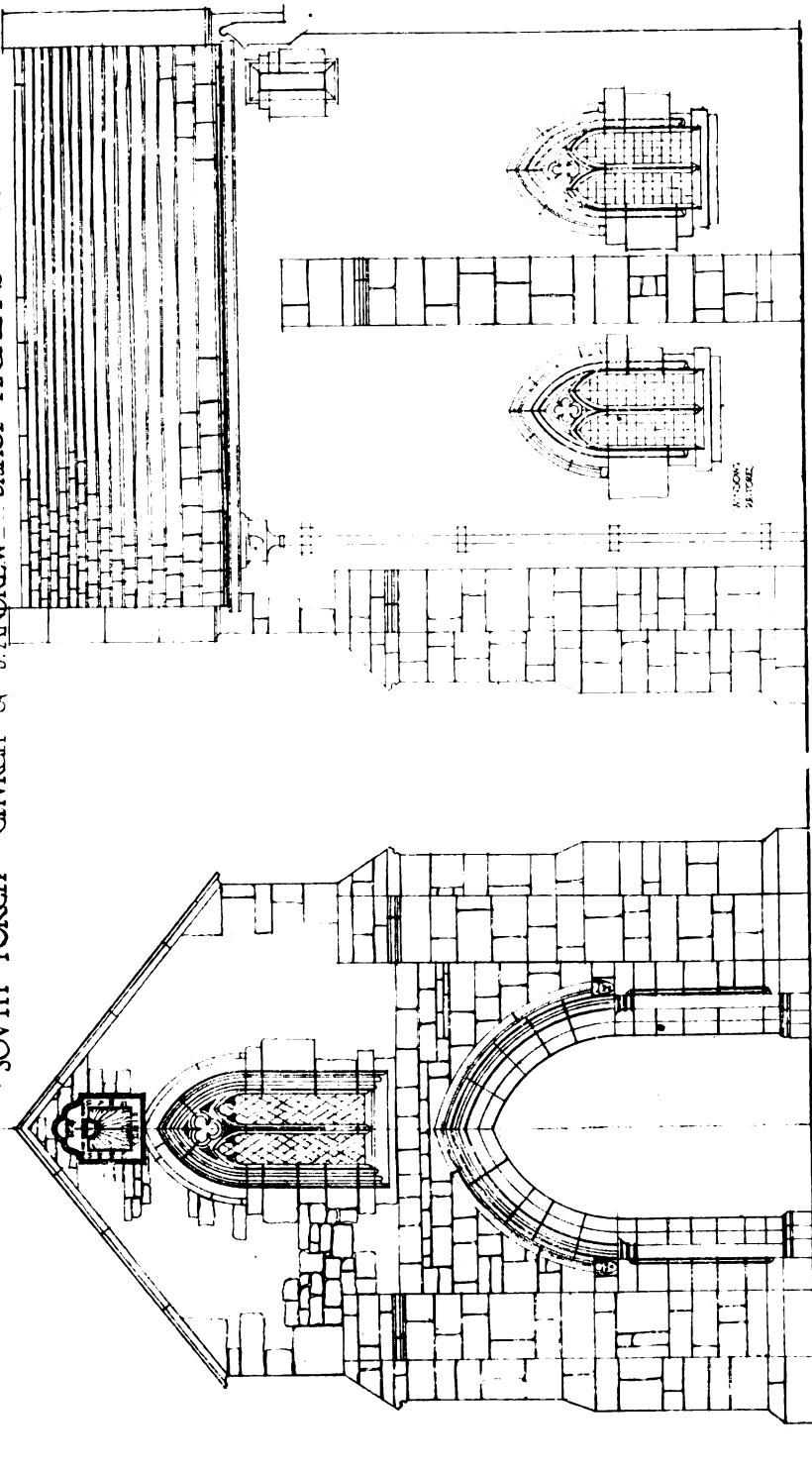


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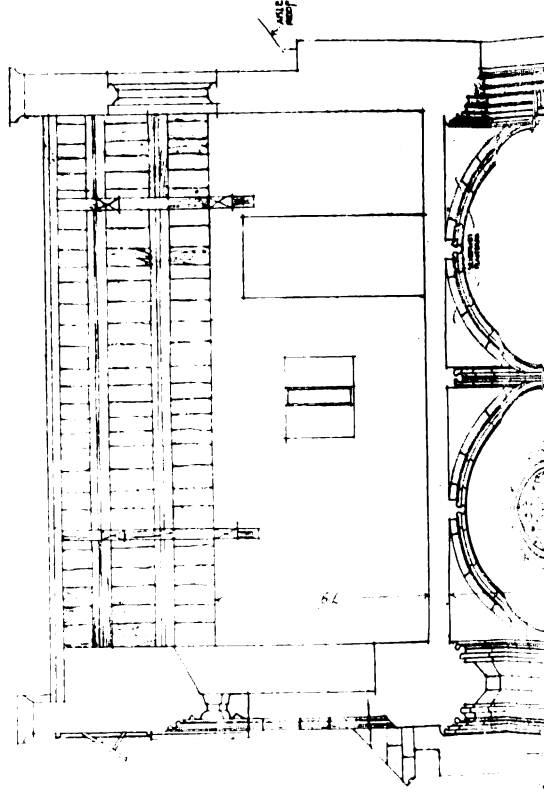


The Architect. Dec. 20th 1912

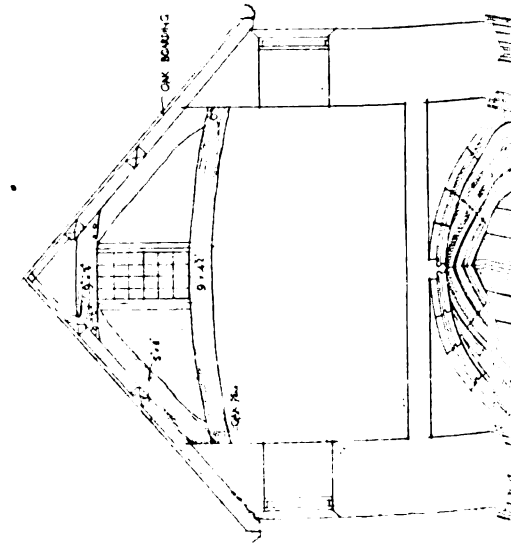
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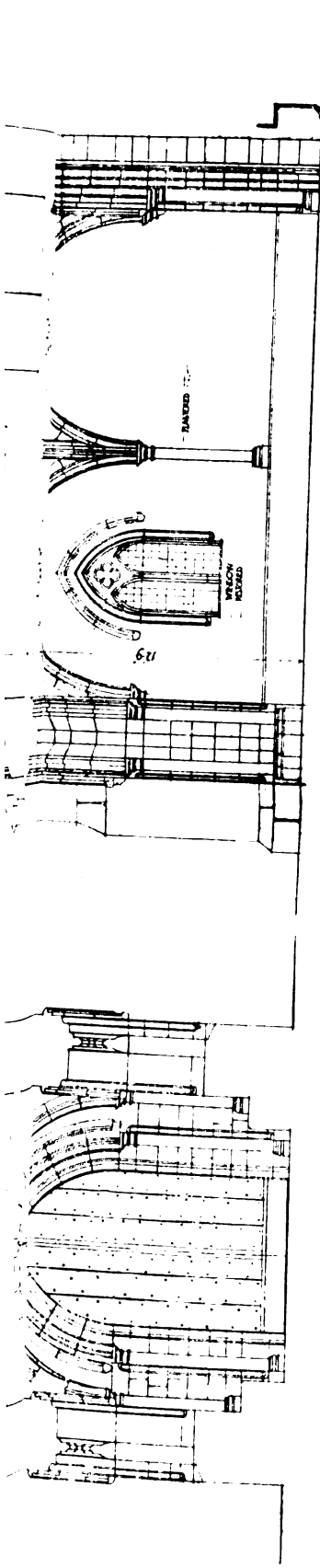


SOUTH ELEVATION



EAST ELEVATION





CROSS SECTION

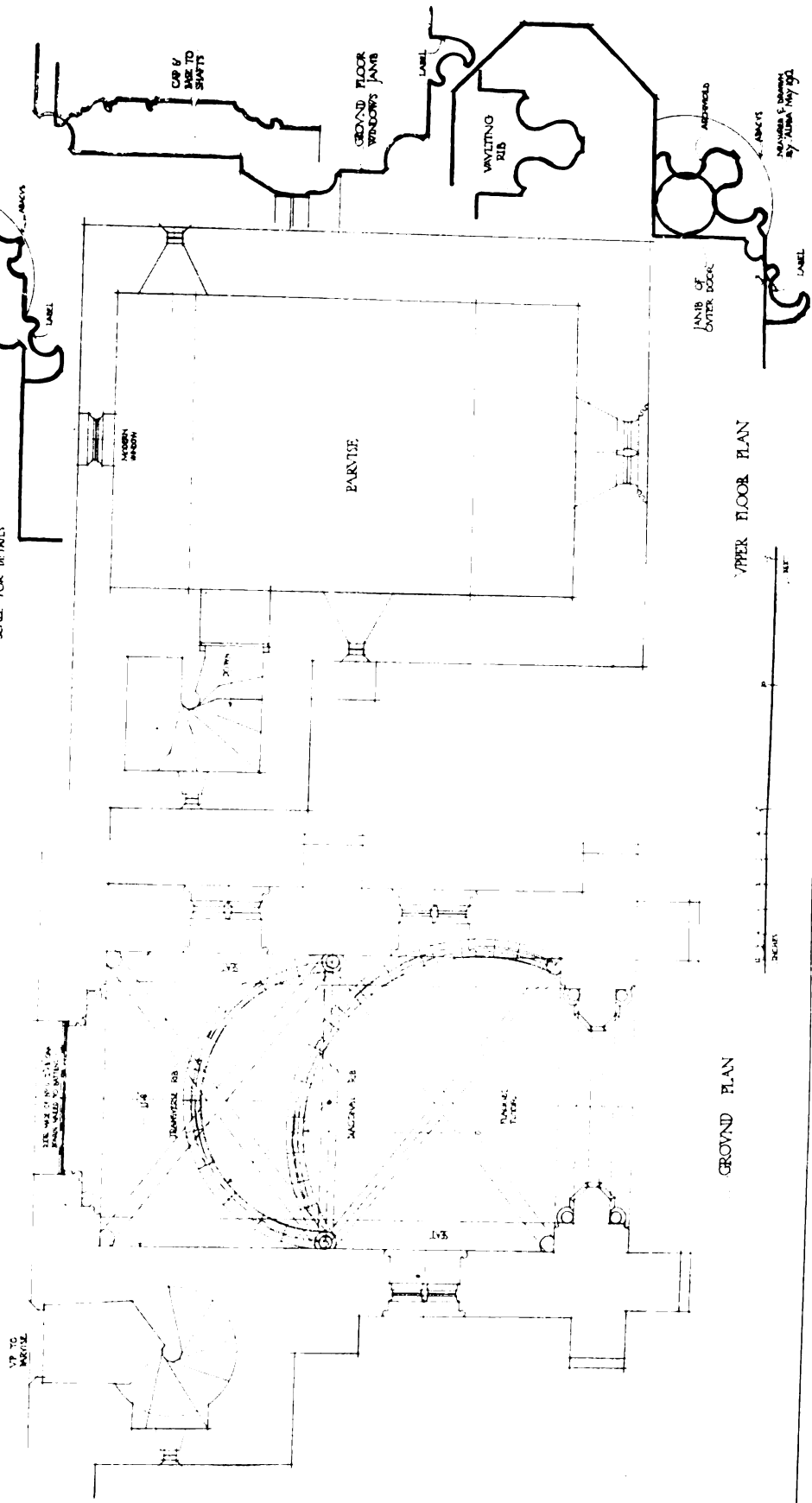
LONG SECTION

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SCALE FOR DETAILS

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INCHES



GROUND PLAN

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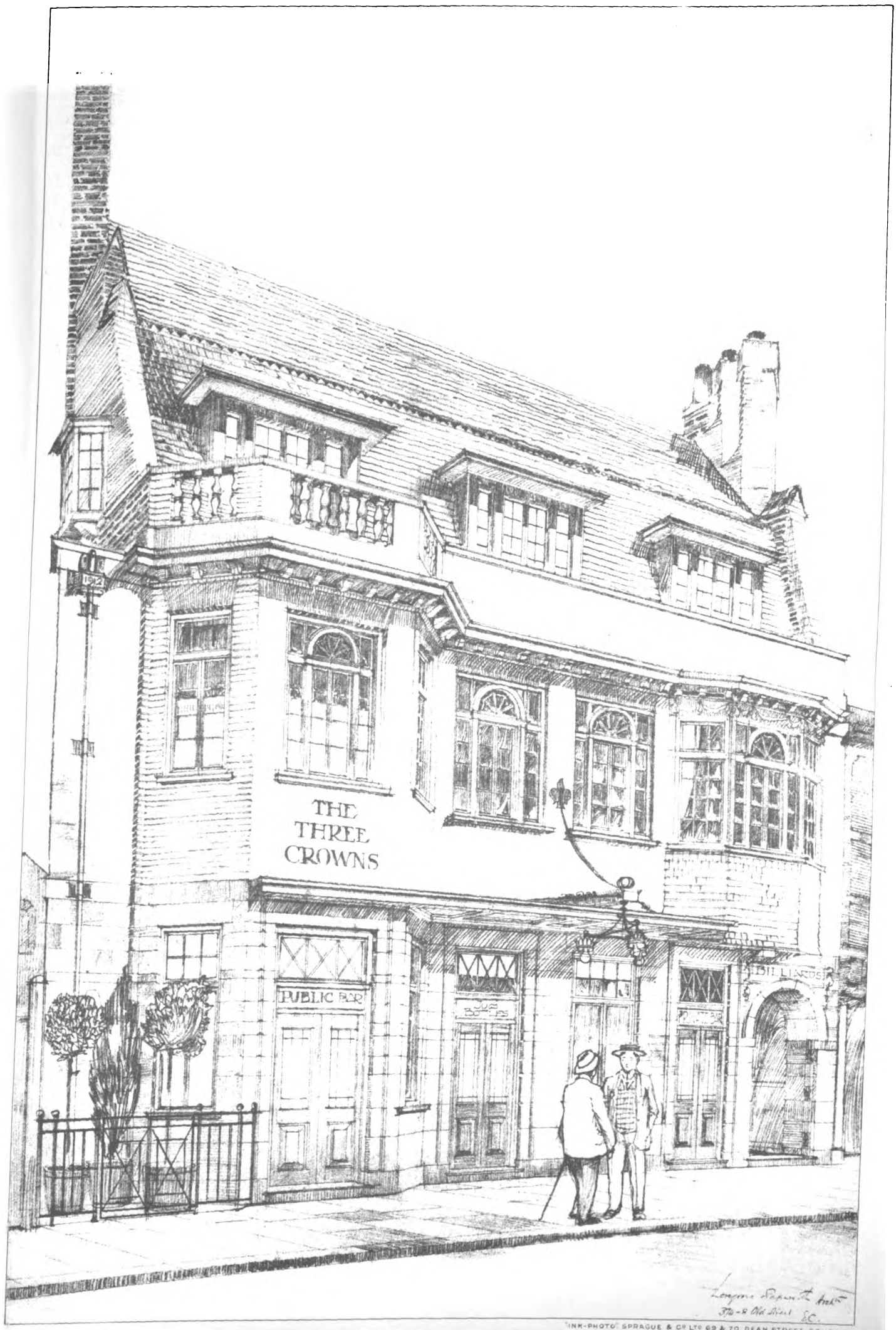
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THE PHOTO SPRAGUE & CO. LTD. 88 & 70, DEAN STREET, SOHO, W.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

Drawing by "ALPHA"









PROVOST'S COURT, KING'S COLLEGE,
CAMBRIDGE, *Sketch Aug 1912*



THE ARCHITECTURAL ASSOCIATION.

A COMBINED ordinary general meeting of the Architectural Association with the Art Workers' Guild was held on Monday, the 9th inst., at Tufton Street, Westminster, S.W., Mr. Gerald C. Horsley, President, in the chair.

Four papers which were reported in our issue of December 13, were then read by Mr. F. C. Eden, Mr. F. W. Troup, Mr. Christopher Whall, and Mr. W. Curtis Green on "The Practice of the Crafts in Modern Building."

Mr. E. P. Warren, Master of the Art Workers' Guild, in opening the discussion, remarked that perhaps it was the first occasion on which a combination meeting of that sort had taken place. They had always understood Mr. Gerald Horsley was the actual founder of the Guild, though in his preliminary remarks he had alluded to himself only as one of them. The question of the controlling of the crafts in a building was a complicated one. In his opinion, no architect was worthy of having control of subsidiary crafts unless he was keenly interested in them. It therefore became necessary for every student to interest himself, and study as far as possible the various crafts with which he might have to deal. Of course, the conditions under which architects have to work are becoming increasingly difficult and complicated. New types of building and new systems of construction were constantly arising. But they had, thank goodness, always some of the old traditional crafts, which must be conducted very much in the way they had always been conducted. One of those was the craft of the mason. In masonry they had still to deal with the cutting and shaping of the mass of stone; and if they could eliminate wherever possible the steam-saw, and rely upon the mason's hand tools, architects still could get, especially from country masons, work very much as it had been done in the last hundred or more years. That fact was to him a great comfort. In carpentry, of course, the output by steam machinery of miles of squared timber was now inevitable. They could not put back the hands of the clock. It was hopeless for architects to think that by the assimilation of ancient methods they could return to primitive results. They had got to accept the methods of the period in which they lived. But an architect in regulating the ultimate results of the contributory crafts which come under his hands could at least see that the unavoidable machine-made or run piece of material was applied in a place where it was fitted. The architect in dealing with the ornamental part of a building could very carefully select the men who were to do the work, and restrict those parts so that there will be funds enough to bestow upon their proper fulfilment. Having chosen the men, the architect should give them as much rope as he could. Those men ought to have had something of an architectural or building training. A carver might do something intrinsically delightful in itself, but which in conjunction with a building would not harmonise with it. Though there was very much lacking in the training of the craftsmen as to the appreciation of architecture, there was just as much lacking in an architect's appreciation of the crafts.

Mr. C. F. A. Voysey said the idea that was uppermost in his mind was that they needed to be possessed of some ethical feeling before they could express themselves in their materials in any way. A general ethical training was necessary as well as a technical one. It was no use teaching the crafts until they had taught what it was they wanted to express in them. Mere craft that expressed no emotion they were better without. The construction of floors with boards and joists hardly came under the name of crafts, though even there the presence of an ethical training might stimulate.

Mr. W. J. Tapper remarked that it seemed to him that in the sort of "packing-case" days in which they lived, and considering the enormous buildings which were put up, the whole present-day system was wrong. In Roman and mediæval and down to Georgian times the craftspeople were doing things in a more or less self-contained way. Now, if they thought of the huge city offices run up, it was impossible to conceive where the question of art entered at all. The work had to be done by a system of tenders to begin with. Competition of that sort could lead to the most dreadful results. Then they came to the question of money. If they looked at an old building it was impossible to think its owners studied the question of cost. Crafts could nowadays only be applied in a very small way. What was the use of talking about craftsmanship, say, in big municipal buildings? Where a contract has to be carried through in three months or so, and the whole thing is cut and dried, they could not expect anything very great.

Mr. W. J. Allcorn contended that a traditional builder working in the country produced work as good now as any of his predecessors.

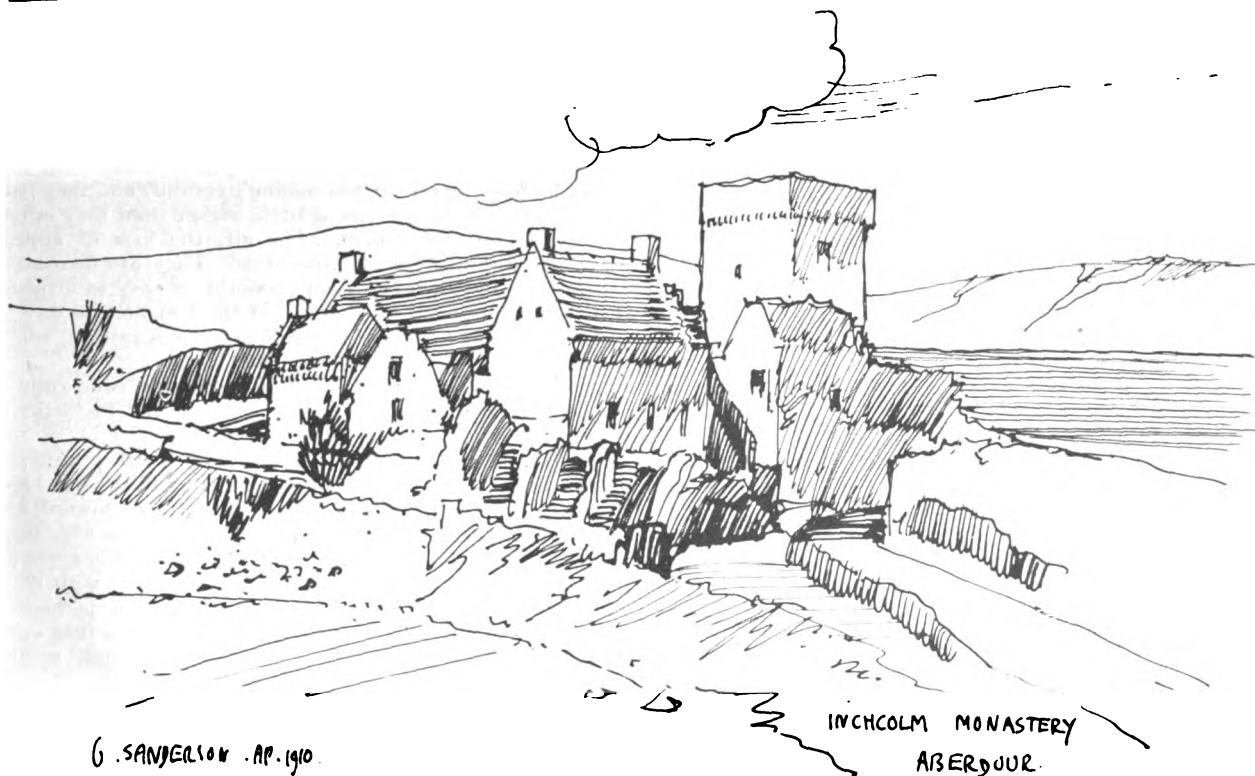
Mr. G. Leonard Elkington pointed out that when they regarded the older buildings it was possible to detect in them a certain intimate relationship between the designer and the craftsman. He could not help thinking that architects were very much to blame for the existing divorce between those two. In the old days, when a man took a great interest in his work, he was able to design a feature entirely suited to its place in a building. Nowadays it seemed hopeless to expect such intelligence from the average workman. Architects have attempted to create "a corner" in design, and the workman has lost interest in his work. In one way he felt inclined to agree that there was a good deal to be said for the small builder, i.e. where the builder was really the head of things and could go to the job himself. He had in consequence rather an objection to firms under the limited liability clause where there was no "head" to be seen. If they, as architects, could encourage the small builder it would in its turn encourage the small builder to take apprentices. The problem was to make the workman again interested in his craft. When he did that, architects must allow him to take some share in the design.

Mr. H. M. Fletcher thought that it was becoming too much a catchword that they could not expect a workman to take an intelligent interest in his work. If they, as architects, talked to them and sought their advice, they would generally find a man had two or three alternative ways of doing a thing, and had a decided opinion about one of them. Personally, he believed it to be quite a good thing for architects to talk with the men. He was prejudiced against the crafts being regarded as ornament. There could be, for instance, a great deal of art in bricklaying. He had heard American architects were astonished by the knowledge and skill of the English bricklayers. Builders could be encouraged to take much more interest in their work, and made to feel proud of it at the end.

Mr. Napper said he would like those present to imagine what an old building had been like when it was first built. When a thing was broken they called it art. A good deal of what was done to-day might become artistic in that way. Could art be taught? Who had ever taught art? It was only possible to teach a craft, and that by men who had practised that craft for years. It was impossible to learn a craft in a school. Art was what men put into their work after they had been taught the craft. Again, it was not possible to make a man an architect, although they could give him all the knowledge necessary.

Mr. Halsey Ricardo contended that it was humanity which really came into art. With those things which are old it is not their age nor their imperfections which render them artistic; it is the human touch associated with them. It is when time and all its associations come into a building that it becomes artistic. In architecture you had the hopes and fears, the tragedy and comedy of a building; it sweated human blood. But they had to recognise that they lived in their own time. Old buildings and old methods might be charming, but they were not business. They had to consider many things, and among them the introduction of new methods of thought and work. Machinery had altered the whole world for them. For all practical purposes, the crafts had been relegated to and degenerated into the guise of luxuries. They still existed because they were pleasant and nice; their value lay in their individuality. An architect's business was to take precautions with such crafts as they had still got. Progress would come by the experiments of the younger men. The public did not always recognise the business side of things. All over London there are schools of art and technical schools, most of them largely maintained by the ratepayers' money. They taught their students up to a certain point, and then, just as they were prepared to do something, they were told to go. They got fellows, for instance, who were competent to wield a brush and to do it wonderfully well. Londoners had at the present moment the beginnings of a new county hall. One would have thought the right thing would be to sculpture, carve, and paint it by the workers of these various schools. The young men might be efficient if they only got the chance of doing something. If there was one important thing in education more than any other it was to take a man up to the point where he is able to do things, instead of stopping just short of that.

Mr. W. S. Frith insisted on the necessity for a personal association between the architect and the craftsman if their work was to form one harmonious whole. His belief was



If A agrees with B that, any dispute arising thereafter between them, it shall be decided by C, neither party can sue unless it be shown that C is dead or has refused to act. If A refuses to submit to C's decision, he can (in effect) be compelled to do so by the Court.

In actual practice the arbitration clause with which we have to deal to-day closely affects the engineer or surveyor who is employed by a local authority in connection with the execution of a contract. When disputes arise they are referred to that engineer or surveyor, and the contractor—not unnaturally from his point of view—sometimes tries to get away from the decision of the very man with whom he has been at issue. He brings matters to a head by ignoring the “agreement to refer.” This he does by commencing an action. The local authority then takes out a summons pursuant to Section 4 of the Arbitration Act, 1889, to stay the proceedings on the ground that there is no sufficient reason why the matter should not be referred in accordance with the submission.

IV.—THE ALLEGATION OF BIAS.

The question is, What will the Courts hold to be sufficient reason? It is obvious that bias clearly proved would be sufficient to justify the Court in refusing to allow a particular man to sit as arbitrator; but the question of bias is not easy when considered in relation to a man who was a servant of the employer when the contractor agreed to his name being inserted in the contract as arbitrator. *Ex hypothesi* such a man is obviously bound to his employer to some extent.

What, then, is sufficient bias in the legal sense?

The time has arrived for local authorities to reconsider the whole position.

In order to succeed because of alleged bias a probability, not a mere possibility of bias must be shown (*Eckersley v. Mersey Docks*, 1894, 2 Q.B., 667). The mere fact that the arbitrator is the servant of one of the parties is not sufficient to disqualify him; for this is a fact which must have been known when the contract was signed. In *Ives v. Willans*, 1894, 2 Ch., 478, referring to the arbitration clause, in which the contractors had bound themselves to abide by the decision of the engineer, Lindley, L.J., said: “How does it happen that a man will agree to be bound by such a very stringent provision? The explanation of it is to be found in two circumstances. First of all, competition for this kind of work is very keen, and contractors compete with each other; and, in the second place, it has been ascertained by long experience that engineers of the highest character may be trusted, and when a contractor enters into such a very stringent provision as this he knows the man he has to deal with.”

A distinction is to be drawn between circumstances known to exist at the time of the contract and those which

afterwards supervene. For instance, in a Scotch case, a firm of contractors who had undertaken to build a public building agreed with the town council that a particular gentleman should act as arbitrator in case of disputes. The gentleman subsequently became elected “dean of guild,” and thereby, *ex officio*, a town councillor. It was held that this disqualified him from acting as arbitrator (*Edinburgh Magistrates v. Lowrie*, 1903, 5 F., 711).

The case of *Belcher v. Roedean School*, 1901, 85 L.T., 469, shows that the Court will be reluctant to revoke a submission to arbitration on the ground of interest. In that case a contract provided that all disputes and differences arising on a building contract were referred to the decision of the architect appointed by the building owners. The builders issued a writ against the architect for fraud and misrepresentation, and took out a summons to revoke the submission to arbitration. The architect declined to admit the charges made against him. It was held that an application to revoke a submission to arbitration was one to be granted with great caution, and that the submission ought not to be revoked.

(To be concluded.)

ECCLESIASTICAL ARCHITECTURE IN CENTRAL ITALY.

By T. FRANCIS BUMPUS.

Author of “The Cathedrals and Churches of Northern Italy,” “The Cathedrals of England and Wales,” “London Churches, Ancient and Modern,” “The Cathedrals of Northern France,” &c.

IV.—FACADES.—DOORWAYS.—CAMPANILI.—DOMES.

(Continued from page 200.)

The three rows of open arcades set in the square high base have undoubtedly a good effect, particularly in distant views. Perhaps the most pleasing appearance presented by the Pistoja campanile is when caught at an angle from a little distance; in an uncertain light it assumes a circular form. The top was meant to be seen from afar—as a kind of castle in the air, and in this the architect succeeded. The columns of the open arcades, though well proportioned, are deficient in harmony; their lowest range is of the Ionic order, whilst the second row is a kind of debased Corinthian, and the highest a mixture of curious capitals in the revived Italian and Buddhist style, in which the shafts and capitals of columns are generally of different patterns.

Above the three galleries, which end in a roof, not only provided with those forked battlements that form so marked a feature of the Lucchese towers, but also with four small turrets for the guards, rises a storey also battlemented and turreted, out of which again grows a pyramid, flattened at the top to carry, on four columns, the belfry. This is capped with a spiral roof terminating in a



globe pierced with a spike. The structure above the storey crowning the three tiers of open arcades may be considered to have been a later addition, for it would be wrong to take Giovanni Pisano to task. The upper storey was undoubtedly intended for the belfry, and would have been more appropriate for that purpose.

The study of Classical literature and good taste had not brought its fruits in decorative art when this campanile at Pistoja received its addition. A proof of this is seen in the chequered wall ornamentation which fills the circular heads of the arches of the arcades, where savage square patterns, forming a number of ornamental puzzles, devoid of everything, and varying the design at random, are seen. Such vagaries should be studiously avoided, especially in the decoration of outer walls.

The upper part of this campanile appears to have been constructed of textile fabrics, and this is contrary to all the laws of correct ornamentation. Some decorators have defended this class of ornamentation on account of the fine effect obtained by it at a cheap rate. This, however, is untenable. The Italians inherited the bad taste of decorating their walls with mosaic and floor patterns from the Romans; they often sacrificed the architectural outlines of their buildings to this kind of decoration. They were always too pictorial in architecture, and, it may be added, even in sculpture.

The campanile of Sta Croce in Florence affords a very good illustration of a square spire or high roof set conformably on the tower, and connected with it by gables. When a square tower is covered with a four-sided spire in the ordinary way there is no need of gables to form a transition between the two parts of the design. Such a spire, having its sides parallel on plan to those of the tower, covers the latter completely, and there are no corners or spandrels left to want filling up. On spires of this sort, therefore, gables rarely occur. We meet with them, however, in the church at Echternach, near Aix-la-Chapelle, and there is another instance in the church steeple now under review.

At Sta Croce, where the design is peculiar in several ways, the belfry-stage is unusually light and open. It merely consists of four tall piers, rising from a square base, and brought over again into the square by Pointed arches con-

necting their capitals. Each Pointed arch is enclosed in a gable or canopy of steep pitch, and from the bottom of the gables springs the square spire. From this spire, a considerable way up, is corbelled out on all sides a sort of balcony, also square on plan, and above the balcony, standing on the truncated spire, there is an octagonal pinnacle, with a spirelet of its own. The gables here serve to break up and enrich the bare outline of the roofing pyramid, and they permit the belfry arches to rise a little higher than they otherwise could; but they have, after all, the look of appendages rather than of vital necessities. They are decorative rather than organic: one feels it would be easy to dispense with them; they lack that charm of the best architecture as well as of the best poetry, which Wordsworth called "inevitableness."

A most pretty and interesting Florentine campanile is that belonging to the church of the Badia, and featuring in some respects that of San Pietro at Perugia.

The Badia steeple is hexagonal in plan, with pilasters at the angles, the two highest stages being filled with good Pointed windows of two lights, and the whole crowned with a spire, at the base of which steep gables pierced with small quatrefoils rise on each side. The design of this somewhat minaret-like campanile is rather piquant, and were it not that Giotto copied nobody, might be assumed perhaps to afford some data for the addition of the spire to that archetype of Italian Pointed campanili; it is almost needless to say that of the Duomo.

This tower has been left to the last; for, undoubtedly, whatever insular pride we may feel as we compare it with our own, no one who has any eye at all for the beautiful in art can fail to acknowledge that all previous efforts of this kind have received their fitting crown in this work of Giotto's.

To describe a structure whose moderately just praise would seem, perhaps, hyperbolic to those who have never seen it, is dangerous; and though even the most exquisite drawing and the clearest photograph cannot convey a perfect idea of it to the eye, a description must needs fail more completely to do so. Nevertheless, with this apology an attempt must be made to describe its general features.

The materials are green, red, and white marble; the latter has become yellow by age, and all the tints are beautifully harmonised together throughout. Nor is it the colour only that is perfect, for a study of the several portions of the elevation shows that the whole was arranged in the most carefully graduated proportion; and two points worthy of notice are the distinct marking of the various stages by very pronounced string-courses and the softness of contour which the octagonal shafts at the angles confer upon the whole design. Whether the intended spire would have damaged the perfection of the work is a question that must be left to individual judgment; but no one nowadays would have the hardihood to think of attempting its addition any more than he would of altering the familiar aspect of the western towers of Wells or the central one of York. The injudiciousness of meddling with a familiar outline has been only too painfully illustrated at Chester, and in certain French and German towers left unfinished since the Middle Ages.

This campanile of Giotto, at whose progress Dante used to sit and gaze, must be classed as Gothic, but it wants nearly all the elements most essentially characteristic of true Gothic architecture.

There are no massive buttresses, none of that bold display of construction that forms so charming a feature in such steeples as Antwerp, Malines, Rouen, and St. Omer. The one feature that is consonant with true Gothic feeling in it is the bold machicolation of the cornice—bold in scale and proportion, though treated in ornamental detail with the utmost delicacy. For the rest, the Florence campanile is almost like goldsmiths' Gothic, so to speak. It is deficient in that element most necessary to architectural design—the appearance of monumental stability. It is, moreover, an architectural facing, not a real piece of building, a recollection which must always jar upon us in our contemplation of it.

Yet Giotto's campanile exercises, and always has exercised, an extraordinary fascination upon all who gaze upon it. Even those who condemn it on stern grounds of architectural truthfulness never dip their pens in gall; they cannot escape that spell which it throws around them. The truth of the matter is that, in spite of the objection we naturally feel to a merely veneered architecture, there is in the campanile of Florence a display of a highly-refined artistic taste and organisation. If it is not in a perfectly pure and homogeneous style; if it does not represent the best and most substantial mode of construction, it is a design in

which every portion is nicely weighed, and in which we perceive the application of Classical refinement applied to what in the main are Gothic details. The defects of its design, in addition to that inherent want of solid construction, are that the window tracery is somewhat clumsily treated in detail (but this only becomes apparent by a minute inspection), that the twisted columns springing from corbels are not strictly architectural in their relation to the whole, and have too much the appearance as if they were affixed for ornamental purposes, and that the tower had never reached completion. Of this latter fact few of those who admire it are aware, though the general consensus of opinion among amateurs is that it looks unfinished. Considering how almost universal is the completion of the straight-lined Italian campanile, with a lantern and a spirelet, it is surprising how blind even architects seem to be to this incomplete state of the campanile at Florence, even supposing that they are unacquainted with its history.

Giotto had intended to terminate the square by a pyramid, as in the campanile of St. Mark at Venice, but his successor, Taddeo Gaddi, was averse to that addition. There is a certain doubtfulness as to the actual authorship of the design, some of the Italian savants regarding Giotto's connection with it as a myth; but we do not find any doubt expressed that it was not intended to terminate in its present abrupt fashion. In fact, the carrying over of heavy machicolation with nothing further is a device proper rather to military towers than to such a piece of purely decorative architecture as this. It may be doubted, however, whether a heavy pyramidal roof would not rather overweight the delicate design of the substructure, so different from the nearly solid mass of such a tower as that in the Piazza San Marco at Venice. One would be inclined to prompt an octagonal spire of inconsiderable height, similar to those that crown the two graceful campanili at Viterbo, or that which so appropriately terminates Sta Anastasia's at Verona.

The manner in which the dome was introduced and adopted in Italy was so diverse in its causes and its results as to detail its history in any clear and consecutive order very perplexing. Its growth, however, may be traced all along the line, here developing and there decaying, from the time man first began to imitate the forms of natural construction.

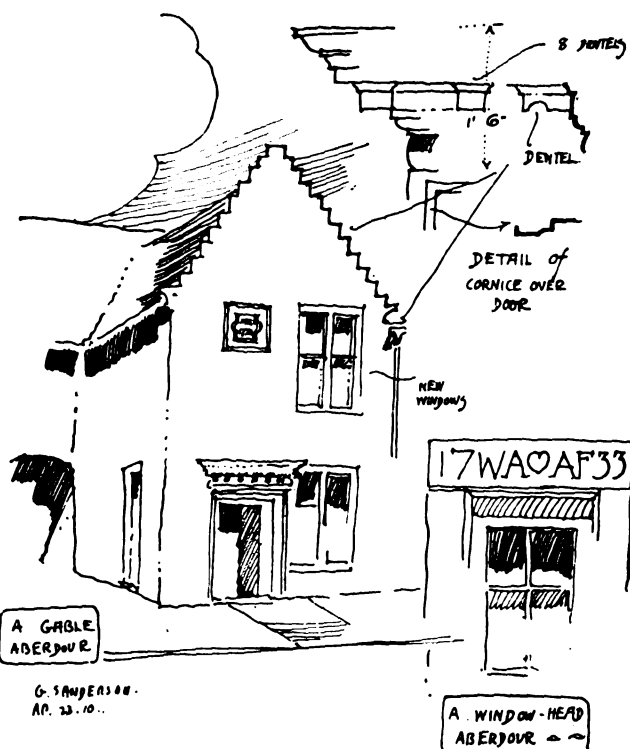
The complete dome is at first nothing but a mound scooped out. But there are incomplete domes; those, for instance, which are only domical externally—such as the mound, cairn, or tope—and those which are domical internally, as are most of the mediæval domes. It is manifest at once to every archaeologist that to ceil domically and to roof domically are distinct operations, which may or may not be united in one and the same cupola.

The dome as first met with in masonry is no arched construction, but a series of horizontally-bedded overlapping rings, with their under-edges smoothed off, forming in section not a semicircular, but a Pointed arch. This method of corbelling, of course, has its limits, and is unsuited for buildings of large spans. It is seen in the rude early structures, commonly called beehive houses, as well as in the carefully-wrought tombs known as Etruscan. The wall openings of the same early period were often similarly built—namely, a series of plain corbels, with their projections smoothed off to a curve like an arch, or cut straight. This may not inappropriately be styled the corbel-dome. The second form of dome is that marked by the Pantheon at Rome, where the cupola is raised upon a circular or pentagonal substructure, and is constructed on the principle of the semicircular arch. The enormous weight of the haunches, the external design, and the general treatment show clearly enough that up to this time the architects' or artists' thoughts were wholly directed to the dome in the character of a ceiling, and not as an external or roof form. This may be called the arched drum dome.

Again we travel eastward, and find the third form. This we may call the pendentive dome. It is the mother of nearly all mediæval domes—of the huge yet elaborate pendentive of the Eastern mosque, as of the plain yet solemn cupola of Aquitaine. This contrivance for fitting the hemispherical to the quadrilateral was the really great invention connected with this important architectural feature.

The next step was to lift the dome and give it as much emphasis externally as it had received internally. The fourth phase, then, introduces us to the last development, which may, perhaps, be best described as the tower dome.

There were two distinct influences, both occasionally tending to the adoption of the dome in Italy. At Rome, and in places under its influence, such examples as the Pantheon



could not fail to have their effect upon the architecture, and we accordingly find these numerous scions of the provincial family, while the purely Byzantine forms were simultaneously introduced by way of Ravenna, and later on were planted at Venice. Through this twofold influence the dome became very frequent throughout Italy. It was carried by Charlemagne from St. Vitalis at Ravenna to Aix-la-Chapelle, and later on was imported from Lombardy—where we find beautiful examples at Parma, Piacenza, Pavia, Cremona, and Trent—under the first three Othos across the Alps, down the valley of the Rhine, and far into the interior of Germany.

Only a few years later it was conveyed from Venice into Western France, whence it spread through an extensive district stretching eastward into Auvergne, even as far as Lyons, and north-westwards to the banks of the Loire.

In that portion of Italy of which these pages treat we find several very graceful applications of the dome, notably in the Baptistery of the cathedral of Pisa, and in that of Siena, and when, later on, the great domed creations of Brunelleschi and Michel Angelo had set the fashion, hardly a church was hereafter built in the peninsula in which the dome did not constitute the leading feature in the design.

The occasional attempts of the Italians to combine the dome with Pointed work is deserving of great attention, the domes of Siena and Florence cathedrals and of Sta Maria della Pieve at Arezzo being examples of the introduction of this feature by Gothic architects.

The dome of Siena Cathedral is a most interesting illustration. Rising from a hexagonal base at the intersection of the cross, it causes the great north and south piers to stand in front of the arches opening into the transepts, raising some speculation in thinking minds as to what would have been done with these huge masses of black and white marble had the great projected new nave running southwards become an established fact.

The alterations of the Baptistery at Pisa, and the exterior of that at Pistoja, are instances of the success with which the Tuscans could treat their external details, while the remarkable church of Il Santo at Padua is roofed in imitation of St. Mark's, Venice, with a succession of domes.

Allusion was made in the remarks on Italian groining to its almost universally domed character; and there is a very singular instance of a square vault or dome, if so it may be called, nearly 60 feet in diameter, and dating from about the end of the thirteenth century, over the baptistery on the north side of San Giovanni at Lucca.

Within a short walk of Perugia is the curious church of Sant' Angelo, a polygon of sixteen sides, opening into an aisle, and with its roof supported by arches which cross the circumscribing aisle and rise to a Pointed arch at their intersection in the centre.

The admissibility of the grand dome is the single point in which the Renaissance can compete with the Gothic. It is its one truly glorious offspring, one from which, unhappily,

we have been in a very great measure debarred, but it is only one against countless forms of majesty and beauty. Even the domes of Florence and Brescia, of the Umlta at Pistoja, of the Salute at Venice, and the Carignano at Genoa cannot contend, speaking interiorly, with the varied splendour of the lantern towers of Durham, Lincoln and York, or of Rouen and Coutances.

(To be continued.)

THE ROYAL INSTITUTE OF OIL PAINTERS' THIRTIETH EXHIBITION.

THERE is a certain obviousness, though not too pronounced, in comparing or contrasting this Piccadilly Oil-colour Exhibition with the contemporary Water-colour Show in Pall Mall East. In so doing it becomes apparent that the comparison or the contrast is greatly in favour of the latter. It is not possible to suggest a cause for the grievous disparity between one and the other; the fact must merely be accepted. Indeed, in strolling quietly around the galleries in Piccadilly a sensation of spirit-weariness became manifest—one of sullen dissatisfaction that so little meritorious work of the first rank was to be seen. For there in an Exhibition with over three hundred and fifty catalogued entries not one-fifth could in sincerity be marked with the cachet of canonistic art.

Mr. A. F. Hayward, in "Trefoil and Daisies," "Sweet Peas," and "Wild Flowers," shows delightful studies; flowers are evidently an unsealed fountain for him, and he has drunk of the waters to some purpose. Mr. Glyn Philpot in "Paschal Light" has produced a striking ensemble; the yellow haze of candle-light, bathing the ministrants at the altar, the foreground candelabrum, the harmonious background, all show good work. Mr. W. A. Breakspeare's "A Spanish Smuggler" is one of the best of the exhibits; it is forceful and toneful. The late Onslow Ford is well represented by a marble bust of the late Alma-Tadema, a speaking likeness, and full of vivacity; modern portrait-sculpture as good as this may be seen, but not very frequently. As regards oil-portraiture, Mr. F. M. Skipworth's contributions leave nothing to be desired; "Violetta" is a revelation of fine work, and "Mrs. H. B. Dale" is scarcely less fine, the slight difference in effect being possibly due to the difference of personality. Unstinted praise, too, is to be accorded to Mr. Calkin's portrait of Major-General Henneker, C.B. Other excellent portraits are Mr. Birley's "Sir William Clayton" and M. Bertieri's "La femme qui passe" (his wife) and "Mlle. de Gray."

A perfect little sketch is Mr. Carlton Smith's "At the Cottage Door," showing a girl peeling apples; the architectural background is sympathetically portrayed. Mr. A. G. Bell's "The Storm" is intensive with its heavy pall of threatening storm-clouds, permitting but a slight patch of deep blue sky to show through, and the storm's malign influence on water, bank, and windmill is satisfactorily depicted. Mr. John White has three noticeable exhibits in "Red, White, and Blue," "Under Cawsand, Dartmoor," and "The River and the Rill." Mr. Van Someren's subject-study from the "Pilgrim's Progress" is pleasing work of a high order, but Selous' sartorial treatment of Christian in close-fitting garments is preferable to this artist's scheme of showing the pilgrim naked, even if unashamed. Mr. Ernest Parton, too, deserves notice for "The Lake at Evening." Mr. J. Orrock has an excellent canvas in "Norman Ferry."

Of the four pictures by the President, Mr. F. Walton, attention will be drawn here merely to "A Distant View of Hindhead." Mr. J. Olsson in "Brewing Storm" is as realistic as Mr. Bell in a like subject; the boat in the midst of a waste of waters appeals forcibly to all "who go down unto the sea in ships." Mr. E. G. Walters may be heartily congratulated upon "A Summer Evening in Sheerness." The Vice-President, Mr. T. B. Kennington, has an intimate knowledge of facial expression; "The Glory of Woman" shows a young lady combing her auburn tresses, and "The Pledge" and "A Merry Heart Goes all the Way" deserve fully appreciative notice. "Isle of Mull from Monk's Bay, Iona," is Mr. Leslie Thomson's sole contribution, but it is a worthy one. A veritable poem is Mr. A. Severn's "Rain Clouds at Sunset." Mr. Allan Davidson has good work in "The Smith," with pleasing chiaroscuro; and Mr. A. E. Proctor's "The Old Mill-wheel" is one of the best exhibits; and this, again, may be said of Mr. Spenlove-Spenlove's "At the Wane of Day." Mr. F. Topham presents work reminiscent of what we most admire when examining "In a Garden on the Solent." Mr. F. Dodd has one of the pleasant

camaraderie pictures in "At the Sign of the Anchor"; other works there are worthy of notice, but perforce unnoticed here.

And now, having stood for a while on Mount Gerizim, let us cross over to Mount Ebal. Mr. F. Carter's "Summer Evening" is not our ideal for the subject, with its crude treatment and dull palette; nor is Mr. Dugdale's "Morning" more attractive, depicting a female fearfully out of drawing and just doffing her last piece of night attire, as she stands beside her bed. And what can be said in favour of Mr. Ginnett's "The Bather"? It is at once crude, dirty, and out of drawing. "Trevail Cove," by Mr. Louis Sargent, is cruel; it shouts at the spectator, art is absent, and only pigment present. Miss Muriel Olsson's "Hyde Park Corner" is mere child's work—or play. "A Critic," by Mr. Almond, shows a most disagreeable subject as regards facial expression and "Revolutionary" attire. "The Nativity," by Mr. Quinn, is but a blur. Mr. Broûn-Morison's portrait of (?) his daughter is not admirable with the death-mask effect of the face.

Once again we have the doubtful pleasure of viewing Mr. Lee Hankey's work; it is true "she" is "In the Wood," but that should suggest her being clothed, not naked; and "Early Morning" is rough and uninteresting. Miss Gloag, whose work is well known, cannot be congratulated upon her three contributions, "A Bunch of Flowers," "Sleep," and "The Yellow Coat." The first and third give us colour without a trace of Art, and the second is poor and wanting in refinement of treatment. Once again we would emphasise the fact that the portrayal of the nude is not only justifiable, but may also do much to correct the false and prurient ideas so unfortunately prevalent; but the portrayal must be in the manner so eloquently and artistically typified by Leighton and his school. Mr. G. D. Davison's "Afternoon—Pimlico" is a terrible aujourd'hui daub; and Mr. Spurrier's "The Basket" is garishness supreme.

Even as we are unable to give space to criticism of all that is worthy, so too are we debarred respecting what is unworthy. But even after allowing for natural differences of opinion upon points of art, details, and critical consideration, we doubt not that the general public will, by a large majority of its members, confirm the views that we have had so regretfully to express in the latter portion of this short review.

MANCHESTER SOCIETY OF ARCHITECTS.

MR. H. T. BUCKLAND read a paper on Wednesday, December 11, on "Pitfalls in Professional Practice."

Addressing himself to the younger members, he dealt with the small mistakes which architects would make.

He said that these stood out in their memory after years of practice as the missed putts to the golfer.

Dealing first with damp in walls, he described the bricks of the Midlands, and went on to recommend cement mortar in the proportion of 8 to 1 in preference to ordinary hair mortar.

He condemned the present tendency to design with flush sills and unthroated copings, and described how a tile creasing in one case had led the water right through the wall. Dealing with roofs, he referred to the unreliability of tiles.

Passing on to foundations, he described the dangers of clay in dry weather.

After touching on the shrinkage in timber, particularly maple, he went into the question of the responsibilities of architects in law.

A vote of thanks was proposed by Mr. Hardisty, seconded by Mr. Lodge.

In responding, Mr. Buckland admitted that he knew a perfect remedy for a smoky chimney, but unfortunately he was unable to publish it to the profession at large.

VICTORIA AND ALBERT MUSEUM

AMONG the recent acquisitions of the Department of Architecture and Sculpture in the Victoria and Albert Museum the following, which have lately been placed on exhibition, are of particular interest:—

A recumbent effigy of a knight in Reigate stone, painted, gilt, and decorated with gesso (A. 10—1912), was purchased from the Lesnes Abbey Excavation Committee of the Woolwich Archaeological Society, with the consent of the Governors of Christ's Hospital, the owners of the freehold. This figure, which may be identified as commemorating a knight of the De Lucy family, is an admirable example of an English monumental effigy of the London school, dating

from about 1320-40; the head is unfortunately missing, but the rest of the figure is well preserved and the remains of colour are extraordinarily brilliant. Such monumental effigies are of great importance, for they represent the direction in which English mediæval sculptors may be admitted to have excelled their contemporaries on the Continent; and it is fortunate that a typical example has been secured for the Museum, where it can be studied to greater advantage than the similar figures still to be found in English churches. Three boldly designed capitals and one shaft of Transitional type, dating from the end of the twelfth century, were purchased from the same site. The Augustinian Abbey of Lesnes, founded by Richard de Lucy in 1178, between Plumstead and Erith to the east of London, was suppressed in 1525; the effigy was excavated on the site of the Lady chapel. It has been placed in Room 8 at the foot of the stairs leading down from the main entrance.

Two candle-bearing angels of carved limewood (A. 16, 17—1912), by the great Franconian sculptor, Tilmann Riemenschneider (b. about 1468, d. 1531), were bought out of the funds munificently bequeathed by the late Captain H. B. Murray. These angels had long been known to special students of Riemenschneider's work, but their position in the remote village of Wolferstetter, near Kulsheim, in Baden, made them difficult of access, and their high qualities could hardly be discerned under a disfiguring coat of modern paint. The colour has now been carefully removed, and the beautifully carved surface of the figures revealed; they may be dated about 1510. The Museum has possessed for many years a large group of two figures, forming part of an altar-piece of the Holy Kindred, by Riemenschneider, and two little heads of Adam and Eve, which, if they are admitted as his work, must be considered his masterpiece in sculpture on a small scale.

A further acquisition out of the funds of the Murray Bequest has been that of a small and exquisitely finished group in wood of the Lamentation over the Dead Christ (A. 15—1912), the work of a sculptor of the Middle Rhine district in the first half of the sixteenth century; the treatment of the heads to some extent recalls the work of Conrad Meyt, of Worms. It was formerly in the Spitzer and Dollfus collections, dispersed in Paris in 1893 and in March of the present year respectively. This group and the two angels are temporarily exhibited in a case on the staircase to the right of the main entrance, outside Room 62, previous to their being placed in Room 100 with the remainder of the Murray Bequest.

Besides the acquisitions by purchase, the Department has been generously presented by Miss S. Mary Forbes with a life-sized terra-cotta group of a mother nursing her baby A. 27—1912), by Jules Dalou (b. 1838, d. 1902). This is exhibited in a recess of the entrance hall immediately to the left of the main entrance.

PROPOSED GOVERNMENT OFFICES IN EDINBURGH.

The following memorial as to the proposed erection of public offices in Edinburgh has been sent to all the Scottish M.P.s:—

December 10, 1912.

Sir,—We desire to call your attention, as the Parliamentary representative of a constituency within our provinces under the Royal Institute of British Architects, to what we consider to be at once a public injury and a serious interference with the free practice of architecture in Scotland, in the placing by the Government of the design of its building work in Scotland with H.M. Office of Public Works in Edinburgh, instead of, where possible, employing the services of outside architects.

For years this practice has been on the increase, until now the amount of work controlled by the office is much more than can be handled with good results by its chief architect, with the result that a large proportion of it has to be delegated to irresponsible assistants, while the opportunities of private architects are correspondingly diminished.

We are not without appreciation of the great ability shown by the present holder of the office in question, but altogether apart from the question of individual skill, we are strongly of opinion that the employment of an outside architect for all routine work is to be preferred in the public interest for the following reasons among others:—

1. All experience of departmental work of this nature shows the oncost in relation to the value of work executed to be greater, when everything is accounted for, than where

done by outside men. From figures put before us we have reason to believe that in the case of Government offices doing architectural work, such oncost is considerably in excess in this respect.

2. The lack of personal responsibility on the part of the designer when an official tends to indulgence on his part in extravagance in design and finish, and this is accentuated when his experience has been confined to the work of a public office where personal interest is not closely involved in controlling expenditure. On the other hand, an independent architect, being freed from inside influences, and accustomed to be held personally responsible for ultimate cost, is in a much better position to look after his clients' interests in that respect.

3. When an official architect is employed there is no second opinion as to the quality of his work. On the other hand, when an outside architect is employed, the Government still have the benefit of the advice and criticism of their official upon the work produced.

We have also to complain of the manifest injustice and hardship involved to the general body of Scottish architects, who, through taxation, are under the necessity of contributing to the upkeep of a department which occupies the position of a favoured competitor.

We address you especially at this time, as we have reason to believe that, in addition to the large amount of work with which the department is already burdened, the Government now contemplates handing over to it the important buildings to be erected on the site of the Calton Jail in Edinburgh, and we beg that you will use your influence to the end that this policy may not be adopted, but that instead, and on the above-mentioned grounds, arrangements may be made for placing this work with outside architects, preferably by competition.

In making the foregoing suggestions, it might be pointed out that the system advocated has already been adopted in England, the designing of many of the more important Government buildings recently erected having been placed in the hands of outside architects, amongst which might be quoted the War Office, the Local Government Board Offices, the British Museum, the Admiralty Offices, &c.

What makes the profession regard this particular matter with more than ordinary anxiety is that the site to be dealt with is undoubtedly of unrivalled importance, the opportunity of treating such a site probably not having occurred in the history of Edinburgh, and the treatment of any building placed upon it will call for the very highest architectural skill which, it is considered, might be most readily secured by obtaining the various ideas of the profession at large by such means as the organising of a public competition.

We are, &c. (signed by representatives of Edinburgh Architectural Association, Glasgow Institute of Architects, Aberdeen Society of Architects, and Dundee Institute of Architects).

DECORATING A PRINCESS'S FLAT.

MR. HENRY WILLIAM VEREY, the Senior High Court Official Referee, began on December 12 the hearing of an action by Messrs. Hampton & Sons, Ltd., of 8 Pall Mall East, against the Princess A. de Lusignan for the recovery of £162 5s. 11d., for decorating her Highness's flat at No. 11 Wellington Court, Knightsbridge.

Mr. F. Mellor (plaintiffs' counsel, instructed by Messrs. Gerard & Arthur Marshall) said the flat in question formed part of the handsome red-brick buildings near Knightsbridge Barracks. The Princess had occupied a flat on the fifth floor—on which the main part of the work was done—and she had some other rooms on the floor above. It was, counsel pursued, in January, 1911, that instructions were given for a representative of Messrs. Hampton to ascertain of the Princess at the flat what was required. On January 28, 1911, the first estimate was sent in, but that was subsequently revised. On February 16 what was called the revised specification, relating to decorative and electrical work, was submitted, and the project was eventually carried into effect. Referring to contentions set up on behalf of the Princess, counsel remarked that the defence apparently was that work was negligently done and that £100 tendered before the action by her Highness was sufficient. Counsel submitted that the work had been fully and completely done. Whatever trivial defects there might have been, Messrs. Hampton, from first to last, had been willing to put everything right, if only they had been given the opportunity.

Evidence was given by Mr. John Harvey Coney, building surveyor, employed by the plaintiffs, and who had entire charge of this work. He repudiated the suggestions as to defects in the work. He added that his firm used only the very best of building and decorative materials. Assuming that there were certain defects and his firm were liable, witness thought that a sovereign would put them right.

Mr. R. B. Mann, F.S.I., said in the course of evidence for the plaintiffs that the work generally had been well done.

Mr. T. E. Haydon (instructed by Messrs. Redpath, Marshall & Holdsworth for the defendant) said that he could not call the Princess, who was suffering from heart disease of a very severe kind. He submitted that the defendant, in tendering before action and bringing into Court £100, was amply satisfying the requirements.

Counsel submitted that this was a case of *quantum meruit*.

Mr. George A. Hall, F.R.I.B.A., who had been sent to examine the work at the flat on behalf of the defendant, spoke of various alleged decorative defects in the flat, these relating to fastenings in the drawing-room. These, he said, had not been lacquered for a long time. He also criticised the material of a picture rail in the oak room. The ordinary precaution of sand-papering the rail had not been observed. Witness added that he would not have passed such work in a flat let at £360. In the dining-room the paper was badly hung and trimmed. The ceiling in a bedroom was defectively done. Knots in the wood were showing through the paint. In his opinion there had been a lack of supervision.

Mr. Haydon said that Mr. Martin, member of a firm of builders who had given evidence, had measured up the work and put in a tender, assuming that the work was to be executed on the basis set down in the specifications. Mr. Martin had said that a fair price would be £107. Mr. Martin had not examined the work for defects, but he had noticed that much of it was poorly done, and he had considered that £90 was the outside that ought to be paid to Messrs. Hampton. Mr. Haydon enquired what Mr. Hall had to say.

Mr. Hall replied that if the estimate for £107 had been put before him he should have reduced it.

Mr. Haydon: Having regard to the condition of the work when you saw it, it would be easier to tell defects than when Mr. Martin inspected the premises?—Yes, time shows.

What do you say would be a fair value of the work to the Princess?—I should think £90 absolutely.

That is an outside figure?—Yes.

Mr. Mellor (cross-examining): I am taking it that in your opinion the difference between the estimated work and the value of the work which the Princess has had is a difference between £90 and £107?—Yes.

Do you think there is any single defect that you did not notice?—I should be surprised to hear of anything that I had omitted.

On December 16 Mr. Verey gave judgment in favour of Messrs. Hampton, the plaintiffs. He thought that the correspondence showed that Messrs. Hampton had always been ready and willing to rectify whatever small defects there might have been, and he was of opinion that the attitude taken up by the Princess in that connection was somewhat unreasonable. Proceeding, the Official Referee said that the question he had to determine was whether or not the work had been substantially completed. He had listened with very great interest to the arguments raised by Mr. Haydon, the defendant's counsel, and to his analysis of the evidence. He (the Official Referee) had had, however, the evidence of Mr. Coney, on behalf of the plaintiffs, and that evidence, he considered, stood uncontradicted. Having reviewed the various items, Mr. Verey said he came to the conclusion clearly that Messrs. Hampton had substantially carried out the contract; that they had done the work specified; and, taken on the whole, that they had carried it out in a proper manner. He thought, however, that some slight deduction should be made for the cost of making good little things to complete the work. For that he allowed £2 5s. 11d., for the matters were very trifling. Bearing those deductions in mind, the plaintiffs, Messrs. Hampton, were entitled to judgment for £160.

Mr. Haydon, for the defendant, asked for a stay of execution in the event of an appeal, but Mr. Verey did not entertain the proposition.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

A GENERAL meeting of the above Society was held at the Institute, Cookridge Street, Leeds, on Thursday evening, December 12.

The President, Lieutenant-Colonel Kirk, A.R.I.B.A., was in the chair, and there was a good attendance of members.

Mr. J. H. Foggitt's and Mr. Piet de Jong's drawings of a "Tour in Italy" were on view, and a paper on the tour was read by Mr. Foggitt.

Mr. de Jong (who was the joint winner of the Soane Prize last year) shows wonderful versatility in his work, which comprises measured drawings in pencil and colour of palaces in Florence, tombs and fragments from the Forum at Rome, water-colours in Venice, and numerous examples of work in Assisi, Genoa, Siena, &c.

Mr. Foggitt also has a fine and interesting show, his drawings and sketches in pencil being crisp, and the detail truly rendered. His measured drawings of the church of S. Maria del Popolo are particularly well executed.

A vote of thanks was proposed by Mr. A. Winch, A.R.I.B.A., seconded by Mr. J. Braithwaite, A.R.I.B.A., and supported by Messrs. C. D. Howdill, A.R.I.B.A., and Douglas Bowman, and carried with great enthusiasm.

COMPETITION NEWS.

CHESHIRE.—The Education Committee have decided, after full consideration, that in all future competitions for new schools architects be informed that plans will only be accepted subject to a bona-fide tender being obtained within a reasonable amount of the sum stated when submitting the plans, and that application be not made to the Local Government Board for the loan for the building of a school until tenders for the work have been received and provisionally accepted.

GLASGOW.—At last week's meeting of the Corporation the minute of the Committee on Municipal Buildings was approved. It contained a report regarding the preliminary sketch designs invited from outside architects for the proposed extension of the Municipal Buildings. Dr. John James Burnet, architect, the assessor in the competition, reported that sketch designs had been received from 100 competitors. Dr. Burnet and the City Engineer examined the designs in the preliminary competition, and on his recommendation the following gentlemen have been invited to enter the final competition: Messrs. Keys & Dowdeswells, Bucks; E. Vincent Harris & Moodie, London; Watson & Salmond, Glasgow; James B. Fulton, London; James Wright, jun., and W. J. Blain, Glasgow.

GLASGOW.—At the quarterly meeting of the Glasgow Provincial Committee for the Training of Teachers, the Chairman, in presenting the report of the Chairman's Committee, mentioned that the negotiations for the purchase of the new Training College site at Jordanhill, extending to about sixty acres, had been completed, and that the site was now the property of the committee. The Scotch Education Department had agreed to steps being taken to obtain competitive designs for the realisation of the committee's building scheme, embracing the provision of Training College buildings for 1,200 students, with a demonstration school, hostel accommodation, &c.

LLANDUDNO.—The Urban District Council accepted two schemes for the laying out of the Happy Valley and the Wyddfyd Estate. A large number of plans and specifications were sent in. The premium of fifty guineas will be divided between Messrs. Henry Pierce & J. B. Walker, Lakeland Nurseries, Windermere, and Mr. W. H. Matley, architect and surveyor, Manchester.

A GENERAL meeting of the Glasgow Institute of Architects was held on the 11th inst. in the Secretary's chambers, 115 Vincent Street, Mr. A. N. Paterson, A.R.S.A., President, in the chair. The Secretary reported what the Council had done as to various matters since the last meeting: (1) The Council had regretted to find itself under the necessity of formally reprimanding two members of the Institute for sending in plans in a competition which had been barred by the Institute; (2) the Institute's suggestion to the Govan School Board that an assessor be appointed in connection with their new school had been accepted; (3) that Mr. J. M. Monro had been appointed representative of the Institute on the Board of Governors of the Royal Technical College.

The Architect.

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THE COLLEGES OF OXFORD.

THERE are many points of view from which the history of the Old Colleges of Oxford can be considered, but that with which we are particularly concerned is naturally their architectural development. In the earliest days of Oxford's importance as a seat of education and learning there can be no doubt that Halls were of more general institution than Colleges; to-day St. Edmund's Hall is the sole survivor, and even its existence is threatened.

A Hall was originally little more than a mere hostel or boarding-house for the temporary accommodation of undergraduates during their residence at the University, while the College was expressly intended to promote the prosecution of advanced studies by post-graduates, coupled with the obligation to carry on certain specific religious services for the intention of the founder, benefactors, and their kin while living, and for their souls' health after death. Thus, while the only essentials of a Hall were sleeping accommodation, a hall or apartment for meals in common, with the necessary kitchen and other adjuncts for their provision, the constituent parts of a College came in course of time to include a common gate, with porter's lodge attached, a lodging for the head of the house, accommodation for the other members, muniment room and bursary, library, chapel, and, lastly, a common room.

At their first foundation the Colleges were intended to be occupied by a limited number, and, until New College was founded in 1370 by William of Wykeham, began as a conglomerate structure made up of pre-existing hostels or sets of tenements thrown into one and adapted by incorporation with more orderly new buildings; hence there arises the distinctive feature of planning of an Oxford College. The various hostels which were needed to form a College consisted of a collection of dwellings side by side, each self-contained and having a separate entrance and staircase leading to its own sets of rooms absolutely insulated from those of the contiguous premises. Thus the staircase rather than the corridor is the key note of the planning of an Oxford College and the medium of intercommunication between the other sets of rooms.

In the earlier Colleges there obtained the universal practice that each set of rooms was occupied by two

or more persons at once; thus the founders of New College, Magdalen, and Brasenose ordained that there should be three occupants in the smaller sets and four in the larger. The introduction of Commoners—that is, persons who paid for their keep—was a contributory cause for discontinuance of the common tenancy of sets of rooms and their occupancy by single individuals. This change of principle and the continuous expansion in numbers led to such extensive enlargement, alteration, or rebuilding of the old Colleges that their original features and arrangement have in almost every case been swept away or obliterated.

The quadrangle is so closely associated in our minds with Oxford Colleges that we can hardly conceive any arrangement of College buildings in which it does not form a principal and inevitable component; but it was very far from being so until William of Wykeham established the quadrangle type of plan at New College.

Wykeham also started the fashion for placing a lodging for the head of the College over the common gate, which forms an exclusive entrance, and it appears that he did so for the purpose of facilitating supervision, a matter of some importance when the undergraduates were boys of twelve or thirteen.

The halls of the old Colleges followed and still retain the model of the great hall of a mediæval house, hence they are usually of one storey and covered with open timber roofs.

Wykeham's position as a pioneer in College planning is further shown by the fact that New College was the first to possess a private chapel for its own exclusive use, the previous arrangement contemplating the use by the Collegers of the parish church in which the College stood, so as to avoid interference with the jealously guarded rights of the parochial clergy.

Wykeham's chapel at New College is of particular interest on account of his introduction of a transeptal ante-chapel, which appears to have been intended, for one thing, to provide room for formal scholastic disputations, and, in the second place, for making a solemn station in front of the great rood every Sunday and principal feast day before the celebration of High Mass; and as his foundation comprised a large priestly staff, his ante-chapel provided space for additional altars. The post-Reformation instances of wide ante-chapels at Wadham, Oriel, and Brasenose are anomalies arising from the fact that the true significance of Wykeham's design had already become misapprehended and forgotten through disuse.

In common with many other repositories of mediæval ecclesiastical art, the Colleges of Oxford suffered severely from the sixteenth and seventeenth century frenzies of iconoclasm.

The adoption of a cloister in the plan of Oxford Colleges appears to have been due to its traditional function of enclosing a graveyard, and again here Wykeham was a pioneer, as his New College, being the first to be exempt from parochial jurisdiction, enjoyed an immunity carrying with it the right of sepulture within its walls.

Professor E. S. Prior points out that William of Wykeham at Oxford drilled and captained the English Gothic masons in the system of fan-vaulting, and the vaulting at Oxford so constructed he describes as stone engineering of extraordinary temerity, but showing no weakness. Certainly the protracted fecundity of fan-vaulting in the architecture of Oxford is an astonishing paradox, lasting as it did as late as 1716, the date of Dr. Radcliffe's gateway at University College, and what is true of fan-vaulting applies also to the forms of Gothic architecture generally.

It is at Oxford that the latest fashions of Perpendicular English Gothic are to be found, and it is due to this persistence that, with the exception of a few

isolated fragments, Renaissance work is hardly to be found in the Oxford Colleges until Palladianism had been firmly established in the eighteenth century.

From the historic point of view the Colleges of Oxford have suffered severely from pulling down, rebuilding, and extension in the nineteenth and even the twentieth century, so that in order to appreciate their architectural history reference is required, not only to photographs of the buildings as they stand to-day, but to drawings and engravings showing their aspect in the past; and for the assistance of study in this direction there could hardly be a more valuable guide than the sumptuous volume* on the Old Colleges of Oxford, by Mr. Aymer Vallance, which is a monument of research on the part of the author, and of exquisite production on the part of the publisher.

Mr. Vallance has treated the subject from the point of view of architectural history, and the former aspect of the Colleges is put before us by the reproduction of a complete set of Bereblock drawings made for the entertainment of Queen Elizabeth in 1556, whilst their aspect some hundred years later is shown in Loggan's views of the Colleges in 1675, the original engravings of which have been reproduced by the collotype process.

For the first time, also, some of the drawings made by J. M. W. Turner, R.A., for the Oxford Almanack are reproduced direct from the originals, while the present aspects of the buildings are brought before us with the assistance of collotype reproductions of excellent photographs by A. E. Walsham. A full bibliography is included, but for the majority of readers is scarcely needed, as the author's description is full and complete and the illustrations ample; so that the book cannot fail to become the classic authority on the architectural history of the Old Colleges of Oxford.

NOTES AND COMMENTS.

THE King Edward Memorial Committee could hardly have come to any other decision than to abandon the proposed site in Green Park fronting Piccadilly when a suggestion to do so came from the King. From the first there had been numerous objections, many of them well founded, to the Green Park site, and there is no doubt that that now proposed by his Majesty is free from all of those objections and affords a better opportunity for the unrestricted conceptions of the sculptor and architect who are collaborating in the design of the memorial. From the popular point of view there can be no question that the new site is eminently suitable for a memorial to King Edward VII., nor is there any objection to the removal of the statue of Lord Napier to Trafalgar Square, which may very well come to be regarded as the Valhalla of our heroes in the United Services.

The ultimate issue of the proceedings taken by Mr. Charles Archibald Daubney, District Surveyor, representing the London County Council, against Mr. Robert John Angel, Borough Surveyor of Bermondsey, for having failed to give notice in respect of works at Vine Street, Rouel Road, Rotherhithe Road, and Bermondsey Street, and for having begun such works without giving notice, is one which will be watched with interest by many of those who are concerned with property in the Metropolis.

The claim of the district surveyor is based upon the proposition that anything done to the foundation of a building or within three feet of a building must be "work" for which notice is required in Section 145. Alterations and repairs to drainage or sewerage work frequently, as in this case, come within three feet of the existing building and may presumably affect the stability

of the building, so that there is some justification for the attention of district surveyors, but the really vital point is that if district surveyors are entitled to notice they are entitled to fees, and the amount of the fees, according to schedule, would in many cases make a considerable addition to the cost of drainage work already sufficiently heavy for those who own old property.

We have before us at the present moment a case in which the drain is being relaid between two semi-detached houses and the excavation comes within three feet of both, therefore if the district surveyor is entitled to notice he is entitled to a fee in respect of "work" to both of these houses. The Magistrate at Tower Bridge Police Court, Mr. Chapman, before whom the summonses were heard, dismissed the charges against the Borough Surveyor, but has consented to state a case, the result of which we, with many of our readers, shall await with interest.

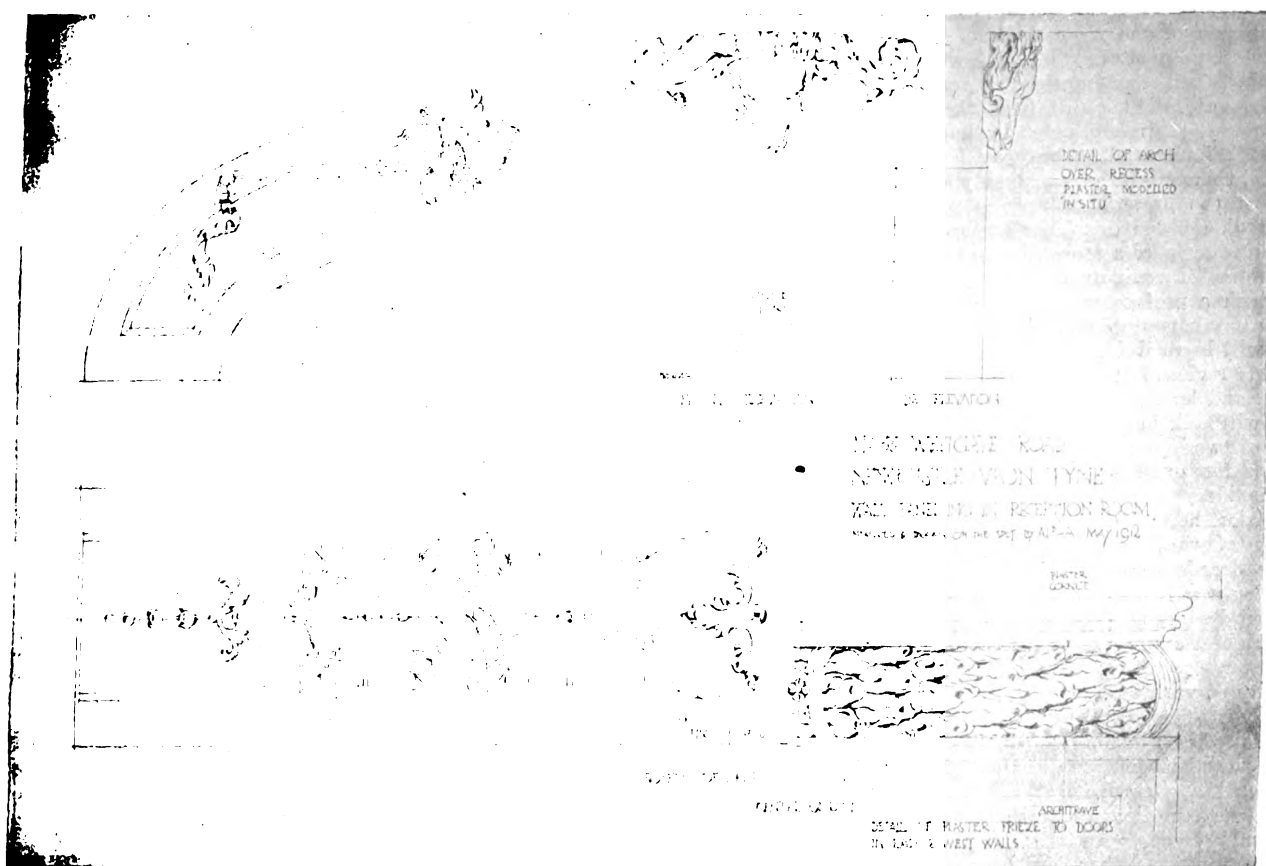
The *Manchester Guardian* contains an interesting article on what tradition says was at one time Sir John Thornhill's house in Dean Street, Soho, which contains some remarkable wall paintings that are also traditionally said to have been the work of Thornhill and William Hogarth.

Some novel points arose in a recent discussion on the housing problem by the Royal Philosophical Society of Glasgow. Professor Patrick Geddes, F.R.S.E., St. Andrews University, who initiated the discussion, prefaced his remarks with a survey of housing in Scotland, and remarked that in the development of modern cities it was manifest that the particular region between the Clyde and the Forth, divided as it assuredly would be by a canal which would make Glasgow a European port, would afford a substantial opening for the future of a great city, which, instead of finding Scotland on a siding of the world, would find it more and more on the main road of the world's traffic between Hamburg and New York. They had, therefore, to prepare for a great and living city, and, in a large and effective way, a city second to none. They in Scotland were at present peculiarly backward as regards housing compared with other civilised countries, and, however they might justify themselves in other matters, such as the education of their famous parish schools, their songs, the quality of their whisky, the excellence of the Waverley novels, the eminence of shipbuilding, and the distinctions of the Glasgow School of Art, they still remained one of the backward populations of Europe as regards housing. There was no question about it, and it was a necessary patriotism to realise that the proportion of rooms per inhabitant in this country was lower than that of their neighbours across the Border or of civilised people in other lands. That was a melancholy fact. They had too many one-roomed and two-roomed houses, and they should be spoken of as a nation of two-roomed dwellers.

Dr. Alexander Maclean, assistant to the Medical Officer of Health for Glasgow, said the beneficent influence of sunshine and fresh air on the life and welfare of the individual was not realised, and if realised was certainly ignored, in the planning of Glasgow in the past. Spasmodic attempts had been made to remedy this by the provision of various parks and open spaces, but parks and open spaces, excellent as they might be, were poor substitutes for abundance of sunlight and fresh air in the dwelling-houses themselves. The principal cause of the dissemination of tuberculosis and zymotic diseases in large towns was undoubtedly overcrowding of persons, houses, flats, and tenements. Direct sunlight had a most powerful germicidal effect on all known pathogenic organisms. The bacilli of tubercle were killed by two hours' exposure to sunlight; those of typhoid fever in one to two hours, 99 per cent. of them being killed in fifteen minutes; and even the resistant spores of anthrax bacilli were killed by three to six hours in bright sunshine. The sun, in virtue of its antagonism to all forms of pathogenic microbic life, exerted an influence

* *The Old Colleges of Oxford: their architectural history illustrated and described.* By Aymer Vallance, Oriel College, M.A. (London: B. T. Batsford. 84s. net.)

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



NO. 55 WESTGATE ROAD NEWCASTLE. (Hy. Walker & Son's Premises).

THIS house, which is now occupied by the above firm of ironmongers, &c. &c., is Georgian style of architecture, and was built about 1750. The chief interest in the house lies in its beautifully modelled plasterwork, part of which the drawing illustrates. The whole of the interior decoration was carried out by Italian workmen, and all the modelling executed in situ. All the plasterwork that exists is in the reception room and the staircase well. It may be added that this is the only real Italian decorative work left in Newcastle-on-Tyne.

on the well-being of mankind, the potency of which had only lately been fully recognised. Every dwelling-house should be so situated that the sun might strike some side of the exposure every day in the year. That this general principle might be given effect to three factors had to be taken into consideration—the width of the streets, their direction or orientation, and the height of the buildings bounding these streets.

The Christmas Number of *The Connoisseur* does not contain much of purely architectural interest beyond reproductions of illustrations from "Picturesque Nepal" and "Byzantine Architecture" accompanying reviews of those books. An ebony cabinet supposed to have belonged to Mary Queen of Scots and a recently discovered plainly treated fifteenth-century stone mantelpiece complete the tale. But the second part of Mr. C. Reginald Grundy's articles on Mr. Fritz Reise's mezzotint portraits is a finely illustrated description of typical examples.

R.I.B.A. EXAMINATIONS.

THE FINAL: ALTERNATIVE PROBLEMS IN DESIGN.

Instructions.

1. The drawings, which should be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education at the Royal Institute of British Architects, 9 Conduit Street, London, W., on or before the dates specified below.
2. Each set of drawings must be signed by the author, and his name and address, and the name of the school, if any, in which the drawings have been prepared, attached thereto.
3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the

design is his own work, and that the drawings have been wholly executed by him.

In the preparation of the design the student may profit by advice.

4. Drawings for subjects (a) are to have the shadows projected at any angle of 45° in line, monochrome, or colour. Drawings in subjects (b) are to be finished as working drawings. Lettering on all drawings to be in a clear scholarly character.

Subject VII.

(a) A monumental staircase and vestibule to a large museum. Scale of drawings 8 feet to 1 inch with two ½-inch scale detail sections.

(b) A village inn with not more than eight bedrooms. The site, which is not a corner one, has an 80 feet frontage with no lighting available on either side. Scale of drawings 8 feet to 1 inch with ½-inch scale details.

Subject VIII.

(a) A covered carriage entrance to a large hotel built in stone. Drawings required: ¼-inch scale key elevation of the hotel facade and ½-inch scale detail drawings of the entrance.

(b) Design for a Gatehouse to a College. Scale of drawings 8 feet to 1 inch with ½-inch scale details.

Subject IX.

(a) A monument in a public place containing one or more fountains commemorating the bringing of water to a town. Drawings to ½-inch scale with one general plan of the place to ¾-inch scale.

(b) A design for a bank in a small country town on a corner site. Scale of drawings 8 feet to 1 inch with ½-inch scale details.

Dates for Submission of Designs in 1913.

	Subject VII.	Subject VIII.	Subject IX.
United Kingdom	Feb. 28	April 30	June 30
Johannesburg	April 30	June 30	Aug. 30
Melbourne	May 31	July 31	Sept. 30
Sydney	May 31	July 31	Sept. 30
Toronto	March 31	May 31	July 31

THE NEW ENGLISH ART CLUB'S FORTY-EIGHTH EXHIBITION.

BEING asked our opinion as to the merits of this latest Exhibition of the New English Art Club, now opened in the Galleries of the Royal Society of British Artists in Suffolk Street, our interlocutor remarked that an unfavourable report might result from the fact that the Art Critic was perhaps already jaded by having inspected some other shows before wending his way Pall Mall-wards. Elementarily, there might be conceivably some justice in the remark, but in the present instance it cannot be conceded as the rightful explanation. For anyone really interested in Art would experience a sense of relief—of recuperation—in viewing works of merit under physically wearied conditions.

Such a preface cannot fail to indicate that the present show has lamentably failed to satisfy the critical judgment (we will leave it for others to say "acumen") of the writer of this review. It is indeed a sorry display—"Ah, take the cash, and let the credit go!" Yes, these pictures we doubt not will sell, but what credit *can* attach to most of them? Out of two hundred and five exhibits about one-seventh merit notice for praise—and even then often on a limited scale. It is depressing in the extreme to wander around these galleries, hoping (and mostly in vain) to see works showing signs of the maintenance of High Art; instead of that it is decadence rampant. Were it on the principle of *reculer pour mieux sauter*, it would be comprehensible, even if still deplorable, but we are of opinion that Art has reached its highest expression, and, therefore, it should be a case of maintenance under varied forms of this expression. Ah, vanity of vanities!

By-the-bye, Mr. Mark Gertler takes Vanity as the title of his subject in his one contribution; but the picture does not establish the justification of such a title, for here is depicted an unbeautiful mis-drawn nude female, afflicted with the jaundice, and seated in an armchair upholstered in emerald green, with a right-minded clothed figure in the background. Where is the vanity? No! but certainly "vexation of spirit" would have been a fitting title in the effect produced on the observer.

There is one artist, Mr. F. E. James, whose five contributions portraying flowers form the most satisfactory series on exhibition. He has a feeling for the graces of blossomed vegetation, which is not alone pleasant in itself, but creates a sensation of relief when the eyes encounter his work in the midst of so much that is poor. Miss Winifred Phillips might advantageously study Mr. James' flower paintings. Mr. F. S. Unwin understands breadth (which is such a valuable quality) in his sepia drawing of "Mont Major," and the architecture is well put in. Mr. R. Schwabe has only one exhibit, and this is a good crayon portrait-sketch of Master Y. G. Jones.

Mr. Augustus John's two contributions are very large—perhaps the largest on show, but their merit is not in keeping with their size. "The Mumpers," yes! but must they all be out of drawing and crudely coloured? Could not some at least have been dealt with so as to redeem in part the faults elsewhere in evidence?

We do not care for Mr. A. Rothenstein's eight works. Who would desire such a Chloe as depicted in No. 33? "The Wayfarers" is child's work, and a "Design for a Silk Panel" is one of the many exhibits which should not be hung, except in a Dark Room. In Mrs. Headlam's "The Apple Orchard" there is distinct promise; the colour scheme is at least harmonious, and is very subdued. "The Railway Station," by M. Verpillieux, is not at all bad, the platform crowds being well massed. Mr. D. S. MacLaughlan has some passably good work in a brown ink sketch of a "White Palace" and an original etching "Val d'Ema," though the latter is somewhat out of drawing. Mr. F. Dodd's "The Monument, Fish Street Hill," is effective and fairly well massed, and Mr. Rushbury's "Clifford's Inn" is a good sketch with decent chiaroscuro.

Mr. Squire's three contributions are indeed poor; one is entitled "They were afraid, and bowed down their faces to the earth." It would really seem as if on occasions the executant had in mind the gallery-visitor when giving titles to the pictures. Mr. Joseph Crawhall in "The Butcher's Boy" has a characteristic sketch, the horse being very well modelled.

Another of the eight-barrelled small-bores (would we could call them big guns!) is Mr. J. D. Innes; in "Mountains of Wales," "North Wales," and the rest there would seem to be a searching after a forgotten past period of Art, and a vain search it proves. Mr. Frederick Brown has satisfactory work in "August, 1912—Thunderstorm." "On the

Thames," and others. Mr. Gerard Chowne also may be commended for "Notre Dame de Vie," "In Regent's Park," and "La Route de St. Vallier Grasse," but "Honeysuckle" is not a success. M. J. E. Blanche cannot be congratulated on his oil-colour of "Tea-table and Lilies," which is hard and uncompromising.

Mr. William Rothenstein has one of the few really pleasing works in the Galleries in a "Panel for a Hypothetical Decoration" most harmoniously treated, and his "Babu Rabindranath Tagore" is quite characteristic of his brush and a pleasant relief after the mass of poor exhibits. Mr. Muirhead, an eight-piece contributor, is not one who delights the eyes; suffice it to refer specifically to "The Sisters"; variegated symmetry may be a quality of architecture, but not of painting. Herein are shown two vis-à-vis and corps-à-corps damsels, each resting their elbows upon the interposed table and each bent stiffly at right angles across this table, the one draped in crude green and the other in crude blue.

Mr. McEvoy may easily improve with practice; his technique is good in the portrait of Master A. Lousada, and the pose of the elder girl in the portrait group No. 136 is satisfactory. Mr. Wilson Steer also shows more than possibilities in his portrait of the Lady Clare Annesley, though the ensemble is anæmic. His picture "The White Yacht" is painted in a pleasant scheme of colour. Mr. Charles Gere has portrayed a very effective sky in "A Cotswold Holiday," and the whole picture is passably good, except that the red parasol is inartistically conspicuous.

Does Mme. Finch call her model "Eve" by reason of her insufficient drapery? Certainly if the title is a fanciful one it cannot be given for the sake of any beauty; the lady (of course, not more than half draped, as she is at dessert) is seated solitary at table, with a background of French wallpaper, which shouts at the spectator. But where is Adam? He is, however, welcome to his Eve. Miss Westray has an effective canvas in "The Veldt," showing the warm brown stretch of plain under grey skies.

One of the few good exhibits is Miss Fanner's "Six-metre Yachts Manœuvring"; it is breezy, well-treated brush-work, and from a bright palette. Mr. Stabb has an elementary study in "A Barge," and Mr. C. J. Holmes shows a childish daub in "Outside Rotherham." Mr. Somerville's "In the Studio" portrays a well-modelled and brushed-in head in good tones. Mr. Shackleton understands delicate colouring, and may improve in composition by practice. M. Lucien Pissarro, the most prolific contributor, is not one to be congratulated.

Ah, well! it has proved to be an Exhibition not calculated to freshen the spirit; its effect has been to throw into greater and more pleasant contrast the works previously visited on the same day. Art is eclectic, there is no doubt, but what a pity its eclecticism does not run in artistic grooves every time.

THE CHURCH OF ALL SAINTS, PAVEMENT, YORK.

By B. G. CURTIS COLLIER AND D. MORRELL.

THE church of All Saints, situated in the Pavement at York, has suffered in common with the street generally—which was at one time remarkably rich in mediæval architecture—from the vandalism caused by increasing commercial demands.

The historic associations of this street are as numerous as they are interesting. The church of St. Crux, originally standing at the other end of the street, with its beautiful Renaissance tower, has given place to an insignificant mission-room whose only redeeming feature is a fine Jacobean tomb. The Market Cross of Classical design, built by Marmaduke Rawdon, was "in the way," and, consequently, removed, and now the fine old timbered house where Harold held a hurried Council after the battle of Stamford Bridge is removed to the precincts of the cathedral to permit of the making of a new street. Yet much remains of interest in the beautiful fourteenth-century church of All Hallows, as it was previously called, and its position at the top of the gentle slope of Pavement is ideal, forming as charming an architectural composition as may be found in the city.

Almost the whole of the north side of the church is built of the ruins of the Roman *castra* Eboracum; but the most striking portion of the church is undoubtedly the lantern tower, octagonal on plan, that rises "lighter than a fire." It is said that this tower at one time held a lantern to guide the travellers approaching the city through the night, and when one remembers that the thickly wooded Forest of

OLD DONIBRISTLE HOUSE
ABERDEEN ~ ~ ~

G. S. AR. 23 1910.

Galtres formerly surrounded the city it is not unlikely that some such provision would be made. The tower still contains the pulley, and this, together with the large lenses preserved in the vestry, add a probability to what is for the most part conjectural. A bell, it is supposed, was rung during the night as an additional guide to travellers.

Access to the tower is gained by a spiral staircase built into one of the supporting piers, opening first into the clock chamber and then the belfry. The latter contains two mediæval bells inscribed thus:

“✠ See: Johannes: ✠ Ora Pro Nobis”
“✠ Ihes Nazarenum, Rex Ivdeorum.”

To gain the roof of the lantern one must perforce mount a ladder—the only communication with the top—but one is amply repaid for the somewhat adventurous climb by the magnificent view of the city, that stretches, as it were, in waves of pantile roofs dotted with chimneys and the towers of a score of churches.

The church consists of chancel, nave and aisles, and the present erection dates from the end of the fourteenth century, when it was almost entirely rebuilt. The main building, however, appears to be of an earlier date, as the windows of the aisles are Decorated, while the large west window, together with the lantern tower, reveal the Perpendicular influence. A possible explanation of this is that the church was originally built in the fourteenth century and restored and added to later. The lantern tower, while in nowise appearing incongruous, is undoubtedly an addition, and in all probability the tower, at the date of the building of the church, was but the ordinary square battlemented building peculiar to the Decorated period. A replica of this lantern is placed on the tower of St. Dunstan-in-the-West in London, and is a notable feature in Fleet Street.

In 1782 the chancel was sadly in need of repair, and the Corporation of the city obtained permission to have it removed, contributing by way of compensation £100 towards the fund for the restoration of the eastern wall, and the space thus obtained is now the Corn Market.

The springers only of the chancel arch remain, but the aisle transverse arches are still in evidence. Recently the plaster covering the interior of the clerestory and the eastern gable was removed, revealing traces of the earlier gable of the chancel. The clerestory, with its square-headed Perpendicular windows, is supported by the finely proportioned nave arcade, whose arches spring from octagonal piers with moulded caps and bases. The principal entrance to the church is on the north side, but the proportion of the doorway has been considerably spoiled by the raising of the street level; on this door is a sanctuary knocker.

The pulpit is octagonal on plan, surmounted by a canopy, and dates from 1634. It is ascended by winding stairs with carved balusters, the whole being a fine example of Jacobean woodwork, panelled and carved, while both pulpit and canopy are decorated with texts carved in quaint Gothic characters. The piers supporting the tower are also encased in woodwork about the bases, whereon is set forth the various charities and bequests of certain parishioners, long since departed. The lettering is that peculiar adaptation of the Roman so frequently used with such fine effect in the fifteenth and sixteenth centuries. The north wall contains a mural tablet to Tate Wilkinson, Esq., the famous eighteenth-century actor-manager, who controlled the “York Circuit,” supplying York, Leeds and Hull with dramatic performances.

One of the most unique features of the church is the oaken Perpendicular lectern (see drawing), which was removed to its present position when St. Crux Church was demolished. This lectern is in the shape of a Greek cross on plan, and miniature Perpendicular buttresses support a

central bookrest to which is chained a volume entitled “A replie unto Mr. Harding’s answere,” and dated 1566. At the corners of the central support are delicately carved effigies representing, no doubt, the chroniclers of our Lord’s life.

The beautiful glass that forms such a glorious feature in many other churches in York is not to be found here, some of the windows depending solely on the tracery for their beauty; but the soft suffused light of the clerestory adds a charm to the otherwise somewhat sombre and commonplace lighting.

Two quaint services are held annually, both in accordance with certain wills and concerning two City Guilds. At one the “Merchant Adventurers attend to be reminded of their latter end,” and at the other the Merchant Taylors. A considerable portion of the present churchyard was at one time, according to an old manuscript, a herb and fish market, but in 1783 the ground utilised for market purposes was procured by the parish as a burial ground.

On the south side is a porch—a later addition—now used as a vestry, also an organ chamber. The latter is decidedly modern, and, as is frequently the case with recent restorations, the surface of the stone is worked to such a degree as to give an almost cast-iron effect, and the absence of the Decorated pinnacles that adorn the roof of the main building accentuates the stiff formality of the modern erection. Nevertheless, the church is one of the finest examples of the combination of Decorated and Perpendicular architecture in York, and is probably only exceeded by the Minster, where the whole evolution of the art of ecclesiastical building in England can be traced, from the massive Norman to the magnificent if somewhat over-decorated work of the Tudor period.

NOTTINGHAM ARCHITECTURAL SOCIETY.

At the second meeting of the winter session, held December 18, two new Associates were elected.

The President, Mr. E. R. Sutton, F.R.I.B.A., announced that the Royal Institute had requested them to consider whether any alteration of the area covered by the Nottingham Society would be beneficial, and in accordance therewith the Council had communicated with the neighbouring societies. As, however, the attendance that evening was not a very large one, he proposed that the consideration of the matter be deferred to a special meeting to be held early next year. He also mentioned that a jubilee fund had been opened to put the Society upon a sound financial basis, and a number of members had promised donations.

Other business having been disposed of, Mr. Thomas Wright, the President of the Nottingham Camera Club and a Fellow of the Royal Photographic Society, gave a lecture on “Pictorial Architecture and Miscellaneous Subjects.”

Mr. Wright pointed out how proper grouping and suitable setting enhanced the pictorial effect of a building and how light and shadow added to its artistic value, illustrating his remarks by means of a large number of very beautiful lantern slides prepared by himself.

The Vice-President, Mr. Harry Gill, in proposing a vote of thanks, complimented the lecturer on the excellence of his slides and remarked that it had been one of the most instructive and interesting meetings of the Society. Mr. A. E. Heazell seconded the resolution.

THE FRIABILITY OF GRANITE.

I.—THE ORIGIN OF THE ROCK AND THE TYPICAL CRYSTALLISATION OF ITS CONSTITUENTS.

WRITTEN AND ILLUSTRATED BY JAMES SCOTT.

(The Crystals range from minute to large ones.)

To speak of the friability of so apparently impervious a stone as granite savours of an anomaly; yet it is really one of the most decomposable rocks in existence. To properly understand the subject of its disintegration we must pay some attention to its structure, and make brief references to its origin.

I will not at present attempt to make any differentiations, but will class all granites as one substance exhibiting slight variations and not fundamental differences. Nor will I involve myself in the debated ideas current respecting the primitive creation of the rock. One broad belief has been established—namely, to the effect that this and allied substances were at first molten, and, therefore, constituted a

mere paste. That this fluid stuff became subjected to tremendous pressure by the weight of overlying strata is also a widely admitted phase. The chief controversies centre around the problem whether water was present or absent during the formation of the constituents.

Summing up my own impressions based on observable facts and on a selection of suggestions it appears that the molten mass must have hissed through huge oceans, and that over it settled the organic and other debris of these regions, era after era, until nature so altered matters that all water had been shifted elsewhere. Rivers that had run into the oceans carried further quantities of refuse, and the paste was finally submitted to an extraordinarily powerful pressure. While it gradually cooled this paste hardened and crystallised into all kinds of forms.

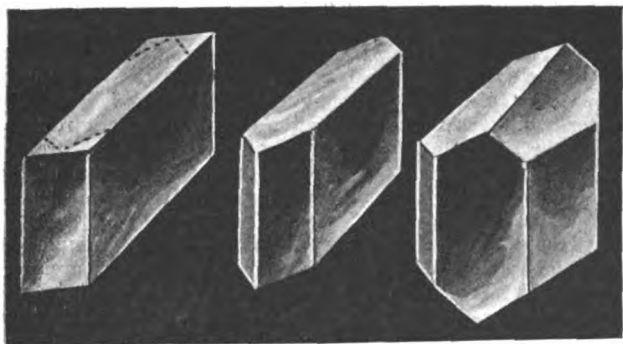


FIG. 1.—Feldspar crystals. By corners dividing off along the dotted lines of the first figure, the second one is produced. Then growth on the right side (of the reader) causes the third object to develop.

It generally needs the aid of the compound microscope before these facts can be elucidated, and if this instrument had never been invented we should remain ignorant of one of the most wonderful facts that confront us—namely, that the hardest of granite and similar rocks are composed entirely of tiny crystals, many quite perfect in shape, held almost inseparably together in a matrix or petrified cement.

It is probable that no one will ever be able to prove the nature and character of the very first crust which covered the earth. It would appear that the granites have been remodelled several times over. Substances—possibly mineral and organic—were stratified and covered with water, or may have remained as dry land, and these sank down until they reached internal heat, and were then resolved into molten masses.

The latter were either consolidated in the manner already outlined or else were belched forth from volcanoes as lava. It is practically certain that had the rocks which now exist

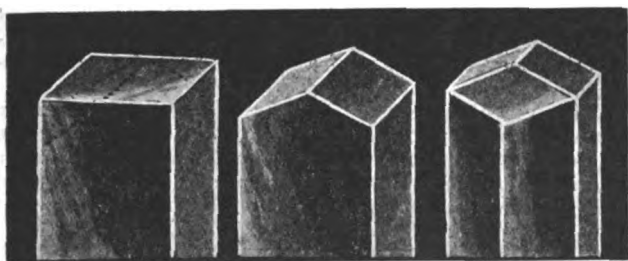


FIG. 2.—Changes of the hornblende crystal, by separation of two of the corners of the first object (along the dotted lines) and then the apexes of the second figure.

as granite been allowed to remain exposed to the air they would have been simply a kind of pumice-stone, or dried lava.

The enormous mass of overlying earth was by some gigantic means, or else by persistent slower action, removed from the granite in many places, the granite no doubt being upheaved as well by earthquakes. Then denudation by rain and floods and the gases of the air caused its particles to be washed away and help re-form other stratas, which were in time remelted and relaid as granite.

In the next chapter are depicted microscopical sections of granite. These slices have been rubbed so thin as to be semi-transparent, so that their whole structure is very evident. All these details are contained within the space of a mere pinhole. This curious fact will help us to understand the subject of granite decomposition, to which I will soon refer in detail.

Every particle of granite consists of crystalline matter, the objects being of different colours and densities. The principal constituents of granite are feldspar, hornblende, mica, and quartz. There are many other minor ingredients, but we need not trouble about them now. According to the amount of the hornblende present so depends the greyness or blackness of granite. Pinkness is imparted by the feldspar, which has been stained that colour by the iron oxides (common rust is an oxide of iron) derived from metallic ores.

We have to remember that as these crystals are each distinct and individual it must be possible to separate them. But the cement—consisting of binding remnants of themselves—is so comparatively hard and impervious that it needs continuous action of the weather to affect them.

Feldspar is comparatively soft, and can be easily scratched with a finger-nail. On the other hand, quartz is exceptionally hard, and enables one to scratch glass with it.

There are really several varieties of feldspar, all, however, really composed of the same ingredients. The commonest kind may be either translucent or opaque, with a pearly lustre. It may be white, red, blue, or green, owing to the effect of contact with the products of metallic ores. It contains a very large proportion of silica and a fair amount of alumina, besides smaller quantities of lime, potash, and iron oxide. It can be fused into a grey, semi-transparent, glassy substance, and comes next to quartz in general abundance on the globe. Its crystalline forms are shown in fig. 1.

Hornblende is generally slaty in colour, and is crystalline. It has a glistening lustre, and may sometimes occur as dark bottle-green, brown-green, or brown-black in colour. When it is bruised or powdered, however, these colours are resolved

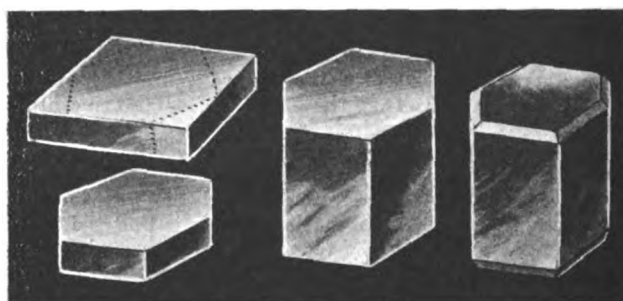


FIG. 3.—The mica crystal begins as a rhombic object, which loses its corners, increases in depth, and then gets bevelled edges.

into a greenish-grey. It breaks up rather easily under the influence of a knife, though it possesses a characteristic toughness. The strokes of a hammer will characteristically indent it, and it can be melted with the aid of the blow-pipe into a black glassy mass. It consists of about 42 per cent. of silica, with smaller quantities of alumina, lime, magnesia, iron oxide, manganese, and water. Its crystalline formations are shown in fig. 2.

Mica is frequently found isolated as crystals of a six-sided, tabular shape, or as rhomboidal prisms. In some parts of the world lumps over a yard in diameter are met with. It can be divided easily into thin fireproof plates parallel with the main planes, and is the familiar substance used as a substitute for glass. It may be white, yellow, green, brown, or black, and has a lustre which mimics that of many metals. Although it is so readily cut, the edges of the crystals are capable of definitely scratching glass. It contains silica, alumina, potash, and oxides of iron and manganese. It is the mica that glistens like specks of silver in granite. Its crystalline formations are shown in fig. 3.

Quartz can be found in several varieties, the chief constituent of all being silica (silex), which is an almost indestructible and unchangeable substance. Even with the blow-pipe it is impossible to fuse it, unless a flux is used meantime. Silica forms the main part of sand and flint. It is the most abundant and oldest of the earths. Quartz may be massive and beautifully crystallised, sometimes resembling large cut-glass objects. Rock crystal and quartz are practically identical with each other. In the sections made for the microscope its tiny crystals are quite transparent, and these generally have 2 per cent. to 3 per cent. of water in them. Quartz appears, however, to the naked eye as milk-white particles in granite.

When a couple of pieces of quartz are rubbed together there is produced a phosphorescent light and a smell re-

sembling that of electricity. It has been proved that in this way certain germs originate, the probability being that the fine dust that falls from the air provides the spores, which are by this means electrified into life.

These facts probably have an important bearing on the decomposition of granite.

In fig. 4 are shown the crystalline formations of quartz. It should be understood that in granite the crystals are seldom found in their complete beauty, with all their facets and planes arranged with perfect geometrical precision. The

the materialisation of a spiritual conception. Here Mr. Anning Bell fails also, and, therefore, it is necessary to regard some other aspect of Art to discover whether he is more successful.

But even when we regard Mr. Bell's colour schemes we are bound to confess to a sense of dissatisfaction; there is a general appearance of undue flatness, of want of harmony. However, in No. 56, depicting Mary as a child being fed by the angelic host, the colouring is both tender and harmonious in mauve and green, and this, too, may be said of "The

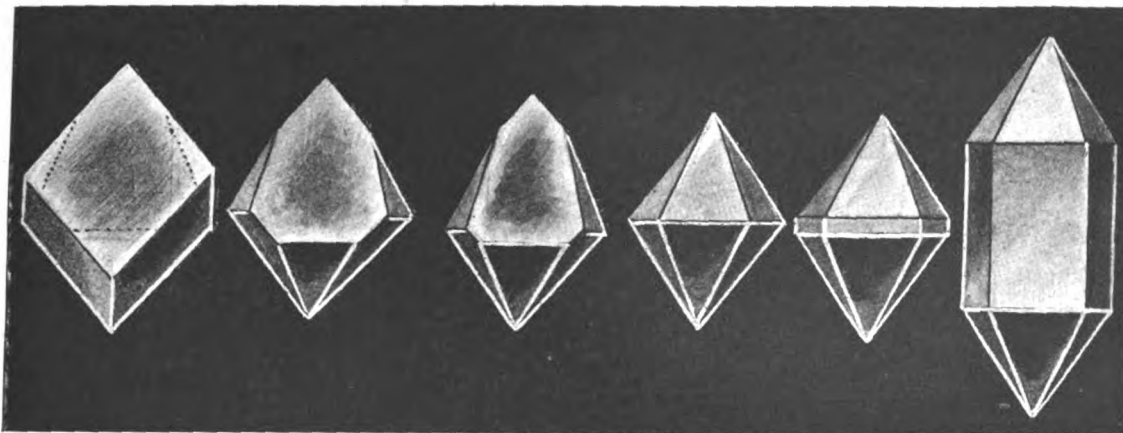


FIG. 4.—Quartz crystal changes. Corners vanish from the first object, and the figure then changes to the second. Increase of size of these corners (back and front) produces a double pyramid; which, by separating, results in the last figure.

confinement of the paste under pressure would not allow of such choice results occurring. What is obtained in this direction is, however, very interesting.

It should be remembered that some acids besides lime, soda, potash, &c., exist in granite.

ILLUSTRATIONS BY MR. ANNING BELL AND MR. EDMUND DULAC.

MESSRS. ERNEST BROWN & PHILLIPS are adepts at providing their patrons and the general public with interesting small shows, and at the present moment there are three, if not indeed four such, to be seen on the walls of the Leicester Galleries. Here, however, we are merely concerned with two artists, Mr. R. Anning Bell, R.W.S., and Mr. Edmund Dulac, respectively illustrating "Mary, the Mother of Jesus," and the poems of Edgar Allan Poe.

Mr. Anning Bell's work is a cult which is not to everyone's taste, despite which, or by reason thereof, it will be necessary for one lacking this taste to exclude rigidly from consideration all personal feelings, and to proceed equally rigidly on purely art-critical lines. And, so doing, it may be at once advanced that it seems quite unnecessary, and perhaps affected, to import the pre-Raphaelite timbre into the subject of the dawn of Christianity. The P.R. brotherhood may or may not have been justified in its views of Art, but these views were not applicable to the history of one century more than of any other; the style was a matter of technique all through, and adaptable to all times.

And, furthermore, if the subject of the dawn (or let us use the Persian simile "the false dawn") of Christianity is to be regarded historically and ethnologically, Joseph, Mary, Jesus, and their companions should be portrayed as Orientals; this, though elementarily true, is pretty generally one of the neglected verities, nor is Mr. Bell an executant who proves an exception to the rule. He also makes his angels too obviously human: as someone remarked to us, the types were the common ones of the London streets. Contrast such treatment with that accorded by Sir Joshua Reynolds, or—to be quite contemporary—with Mr. Blair Leighton's angel in his fine work "Into an Unknown Land," that graced the walls of the Royal Academy in 1911.

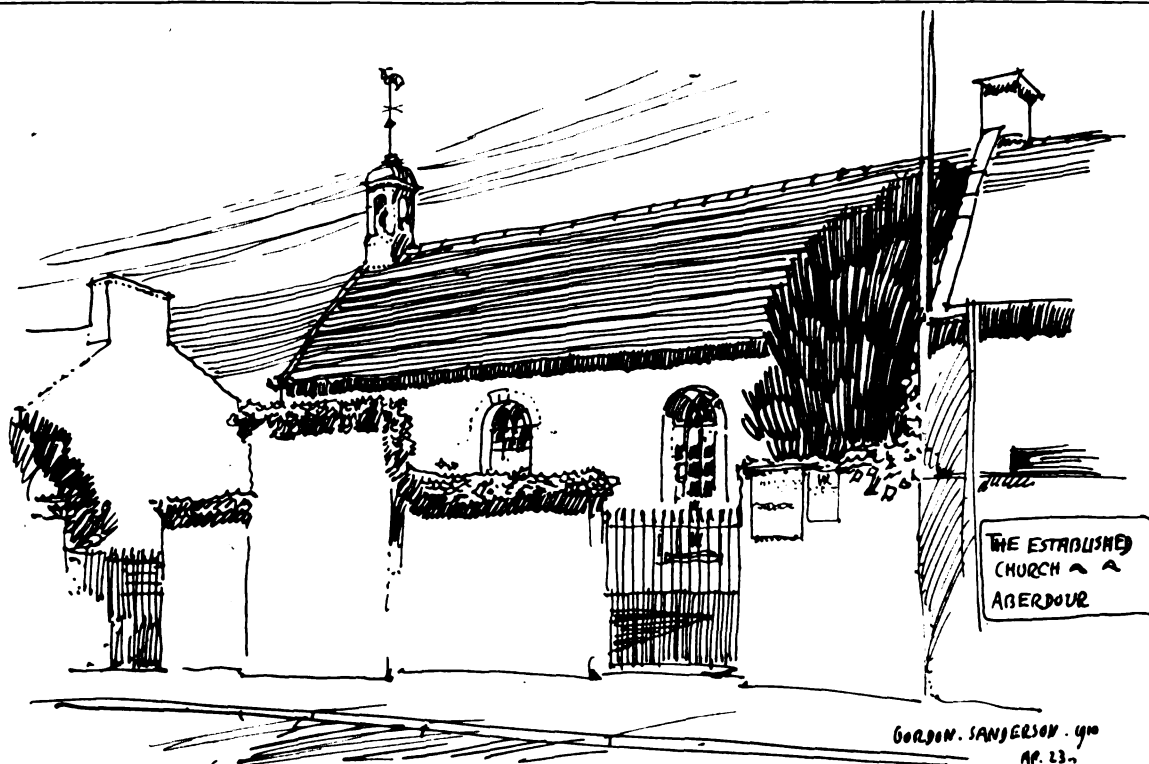
There is no reason to quarrel with Mr. Bell for his ethnological disregard in the portrayal of angels; for, according to human conception, these spiritual beings are of no one race, and, therefore, it would be natural for any artist to express them in terms of his or her own particular standard of beauty. An Ethiopian artist might conceivably portray black-skinned angels with broad and flat noses and high cheek-bones; and if that should be the Ethiopian type of beauty there would be no cause of quarrel with the artist. But this is certain: that beauty should be predominant in

Adoration of the Shepherds" and "Angels with Trumpets" (No. 67).

A really striking picture is No. 73, showing Mary and Jesus with Saints; the figures stand out well, but it would have been a great improvement had more attention been paid to composition; as it is, the figures as displayed almost force their enumeration by the spectator, instead of massing one with another. "The Child in the Manger" exhibits a prettily treated Mary, and she is also well portrayed in No. 61 at the foot of Calvary, a note of sympathetic treatment being struck that is all too conspicuously absent in general.

When we turn our attention to the works in illustration of the poems of Edgar Allan Poe we experience a sensible relief, and this is perhaps curious when regarded from one aspect. For whereas the brightness of Mr. Anning Bell's work might be thought to elevate the spirits, so the characteristic deep-blue tones of Mr. Edmund Dulac's brush might be expected to promote a feeling of depression. That this is not the case may be possibly an idiosyncrasy, and, as such, let it pass. Mr. Dulac is, on the whole, preferable in these water-colour drawings than in his black-and-white line sketches, though amongst these we have nothing but praise for "The Raven" (No. 2), "Tamerlane" (No. 37), and "Edgar Allan Poe."

That Mr. Dulac has entered into the spirit of this most imaginative of poets is evident when we regard such sketches as "The Bells" (Nos. 10 and 11), "The Haunted Palace," and "The Conqueror Worm." His delineation of the traceried window in "The Bells" (No. 3) is realistic. "Al Aaraaj" (No. 4) is one of the finer drawings; the two figures bathed in the light of the unseen moon are excellent, and are redolent of Burne-Jones. "Bridal Ballad" shows a girl of the Rossetti type, well posed, and "To One in Paradise" is a charming sketch. But we have one cause of dissatisfaction with our artist, and this is the cotton-wooliness of his clouds, as seen in "Dreamland," "Al Aaraaj" (Nos. 17 and 38), and others; but this is not much amidst the general excellence of the work. "The Bells" (No. 14) is another architectural conception, showing dark tower and spire against one of Mr. Dulac's rare lurid skies. "To Helen" (No. 20) is a most attractive drawing, the sole adverse criticism to offer being that the eyes are exaggerated in size. But the gems of the collection are "Silence" and "Venise" (No. 42), the latter illustrating some graceful lines by Alfred de Musset. "Silence" shows the reclining figure of a girl with a harp close by her, the whole supported against a heavy dark-blue background. "Tamerlane" (No. 36) has more colour than is customary in Mr. Dulac's sketches. "Venise" (No. 41) is effective with St. Mark's as the background. The pity is that in so many instances the delightful tones of these sketches have failed in reproduction. We do not mind how soon we see another exhibition of this artist's work.



THE PANAMA CANAL AND OTHER DRAWINGS BY MR. JOSEPH PENNELL.

OUR earliest acquaintanceship with Mr. Joseph Pennell's work was that fascinatingly illustrated book written by his wife—we refer to "Our Sentimental Journey." In subsequent years his pen and pencil have engaged our attention in connection with the architectural subjects that have appeared in the pages of magazines and elsewhere. The outstanding qualities of his technique are the extreme delicacy at one end of the scale and the commanding vigour at the other. It is the latter which is more in evidence in the present exhibition at the galleries of the Fine Art Society in New Bond Street, where we see some of the results of his labours in Europe and America.

Mr. Pennell has the faculty, possessed by but a few, of suggesting, without actually expressing, architectural detail; instances of this are sufficiently numerous, and amongst others Nos. 1 and 2 (of "Old and New Rome") may be cited. The "Puerta Visagra, Toledo," is an example of the more purely architectural in touch, and it is of interest to contrast this with the "Gate of the Zocodovar, Toledo," where the actual lines are of the fewest, though the effect is as of a complete drawing. Where Mr. Pennell draws industrial sketches he uses the virile touch with an *empresement* that is notable; and, as indicated earlier, such sketches form a large proportion of the present exhibition, such as the series (twenty-five in number) of the Panama Canal Construction Works, the sketches Nos. 10-29 embracing Chicago, Niagara, and Belgium, and some of the drawings made in England, France, Germany, New York, and Pittsburg. Of these we may instance a few, such as "The Steel Works at Gary," "The Traveller, Charleroi," "Coal-Breaker, Shenandoah," "Gun Factory, Creusot," "The Cut towards Culebra," "Dinner Time," and "The Bottom of Pedro Miguel Lock" (the last three forming part of the Canal series). "A Modern Hobbema, Charleroi," is an example of the more fairy-like touch, and this, too, may be said of "The Cross at Charing Cross." Two extremely good works are "Charing Cross Bridge (Night)" and "St. Paul's from my Window," these two recalling Whistler at his best. Effective in a different way is a Chicagoan sketch, "Under the Bridges"; the bright sky beyond the gloom of the arches proves telling in contrast. But we should be inclined to give the exhibition palm to "Entrance to Henry VII's Chapel," in its gloomy and mysterious impressiveness.

Some of the works are not up to the Pennellian standard; "Steps, British Museum," has poorly-executed portico columns, nor are "230 Strand" and "St. Paul's on Ludgate Hill" attractive; "St. Paul's from Bankside" (an aquatint) and "Rouen Cathedral under Repair" are excellent, however; and "Ponte Vecchio, Florence," "Amiens Cathedral," and "Flower Market, Rouen," are

redolent of the suggestive style of technique which so pleases us in the work of Mr. Pennell, Mr. Railton, and a few besides. There is one curious defect noticeable in some of the drawings under review, and that is the slap-dash recklessness in portraying the railroads; *absolute* parallelism is such an elemental necessity that no craving for artistic indulgence can justify any unmathematical departure, and Mr. Pennell has simply rioted in nightmare treatment of the rails; though in "The Elevated," New York, he shows that he can be sober and rational.

COMPETITION NEWS.

BATH.—The Education Committee have decided to offer a premium of 50 guineas for the best competitive design submitted for the proposed Secondary School.

HUDDERSFIELD.—The result has been announced of a town-planning competition promoted by the Town Council for laying out four acres of land at Lindley, Birkby, Fartown, and Crosland Moor. The first prize of 100 guineas has been awarded to Mr. Alfred Hill, Thornton Road, Huddersfield; the second prize of 50 guineas to Messrs M. A. Piercy, W. H. Beeston, C. B. Thomson, and P. H. Solon, Stoke-on-Trent, who jointly sent in one set of designs; and the third prize of 25 guineas to Messrs. Hart & Turner, Sheldon Road, Nether Edge, Sheffield. The assessor was Mr. H. P. Boulnois, of London.

READING.—The Education Committee have formally approved the conditions of competitions and instructions to competing architects prepared by Mr. Ernest Newton, A.R.A., the assessor for the Kendrick schools buildings competition.

ILLUSTRATIONS.

THE CHURCH OF ALL SAINTS, PAVEMENT, YORK.

THE description of All Saints Church, illustrated by Mr. Morrell's measured drawings, will be found in the article by Mr. B. G. Curtis Collier and Mr. D. Morrell on page 388.

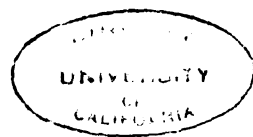
CLASSIC ORNAMENT.

THIS drawing, by Mr. W. Stead Mills, is an example of student's work and a study of the Roman treatment of the acanthus.

SOUTH DOORWAY, KING'S COLLEGE CHAPEL. CHURCH OF ST. MARY THE GREAT.

THE drawings from Cambridge were made by Mr. E. H. Gibson during his tour as holder of *The Architect Travelling Studentship* this year.

7, 1912.



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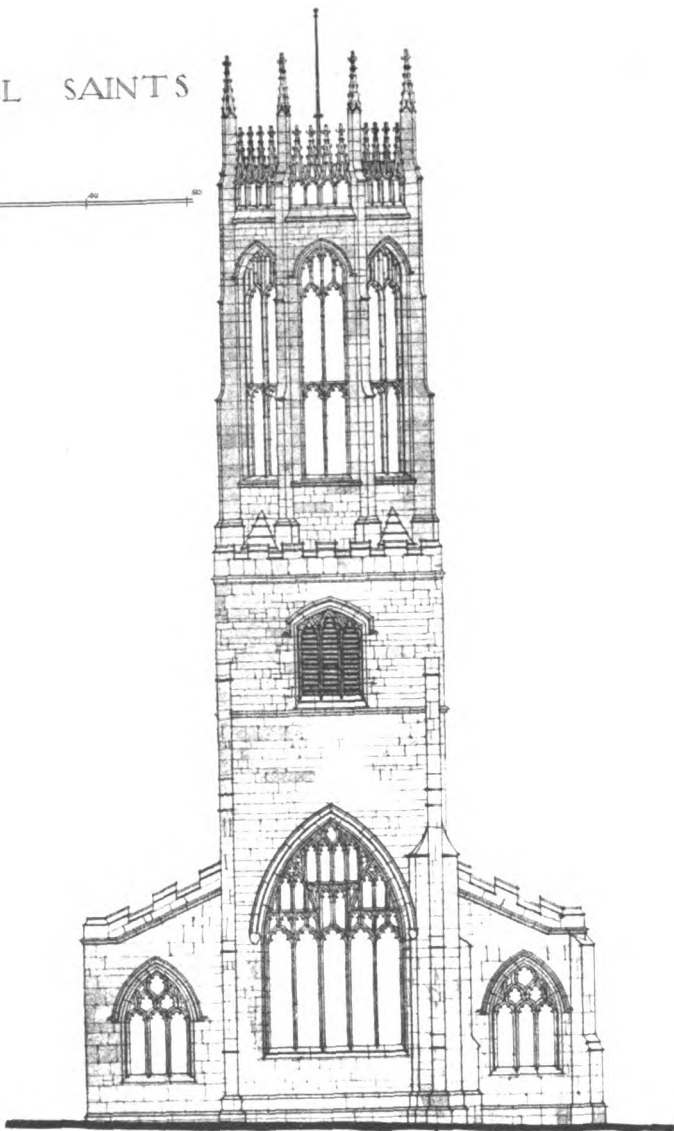
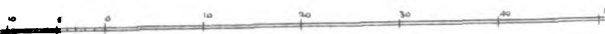
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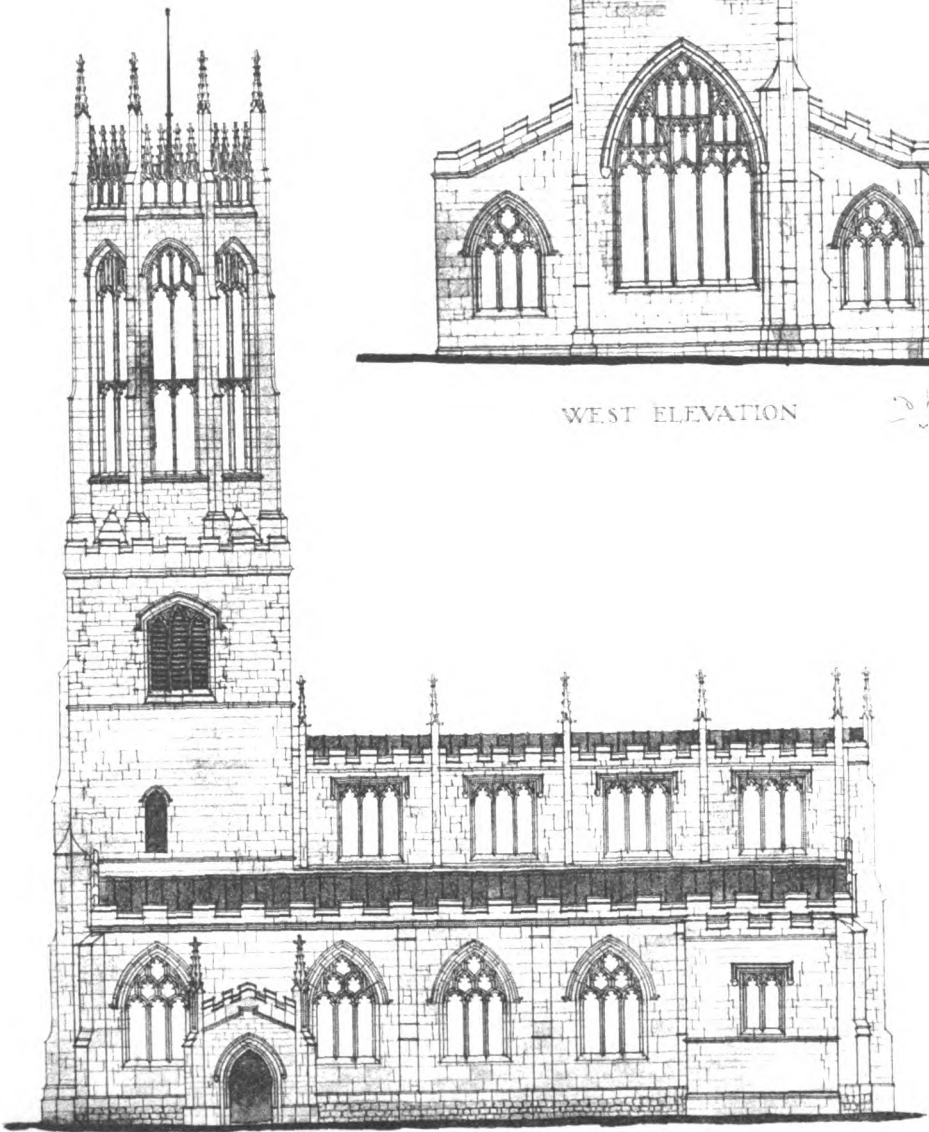
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THE CHURCH OF ALL SAINTS
PAVEMENT, YORK.

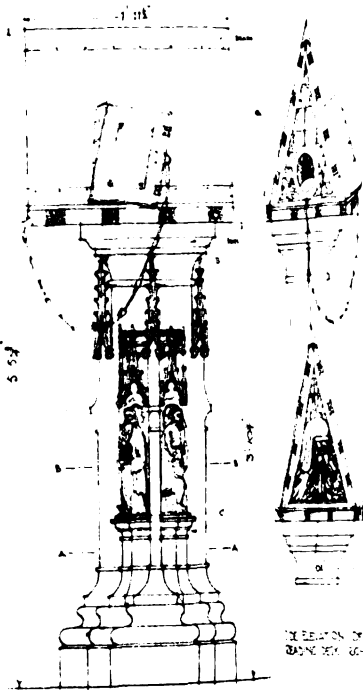


WEST ELEVATION

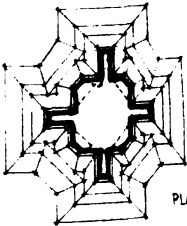
W. H. R. 1884
W. H. R. 1884



SOUTH ELEVATION.



ELEVATION



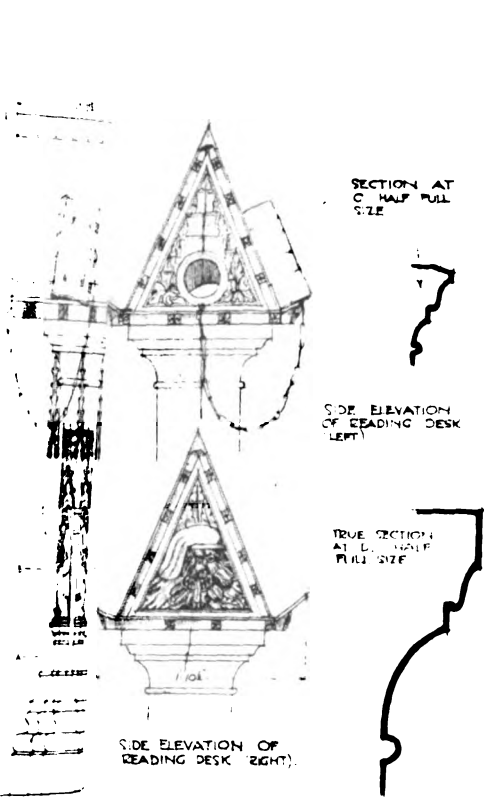
PLAN AT 1

THE CHURCH OF ALL SAINTS
PAVEMENT, YORK.

SCALE 1/2 IN. = 1 FT.



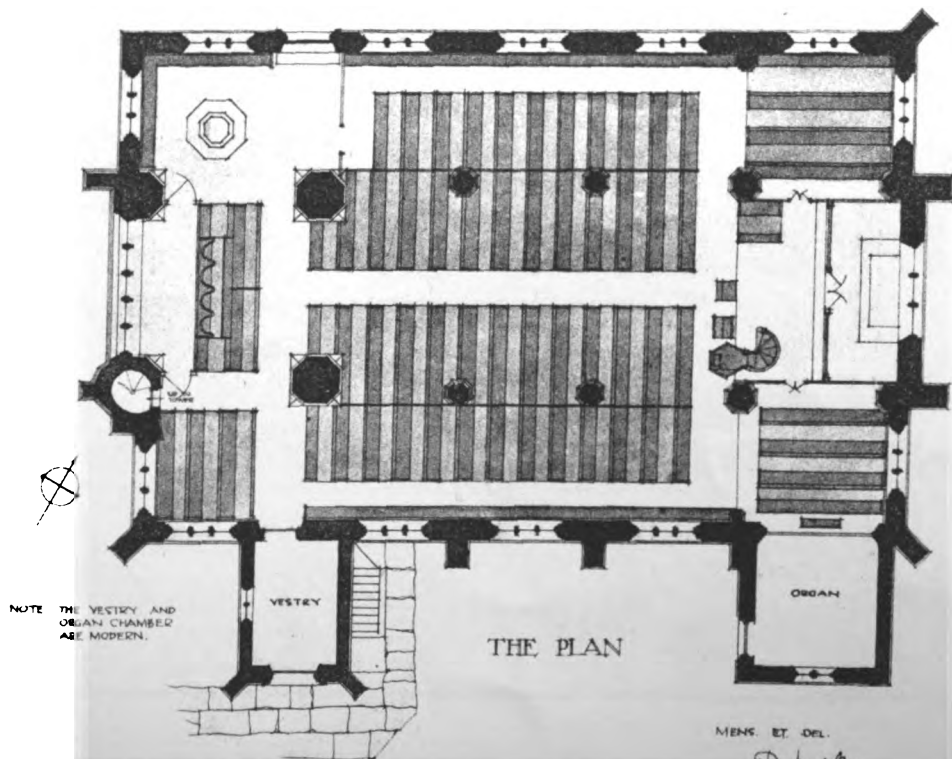
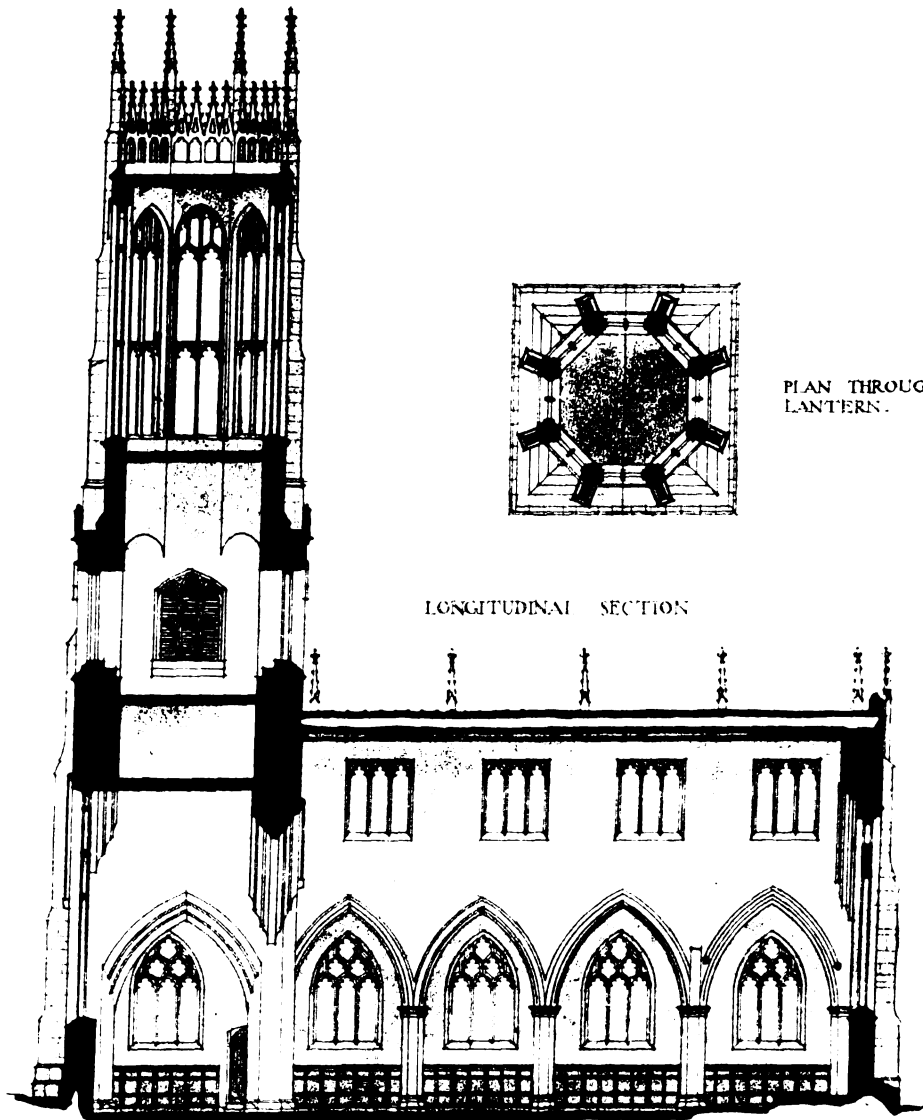
TRANSVERSE SECTION



CARVED OAK LECTERN

THIS ANCIENT LECTERN FORMERLY BELONGING TO THE CHURCH OF ST CRUX, WAS REMOVED TO THIS CHURCH IN THE YEAR 1887.

WILKINSON & DOWNEY

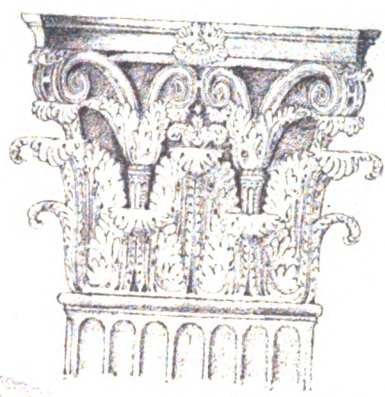




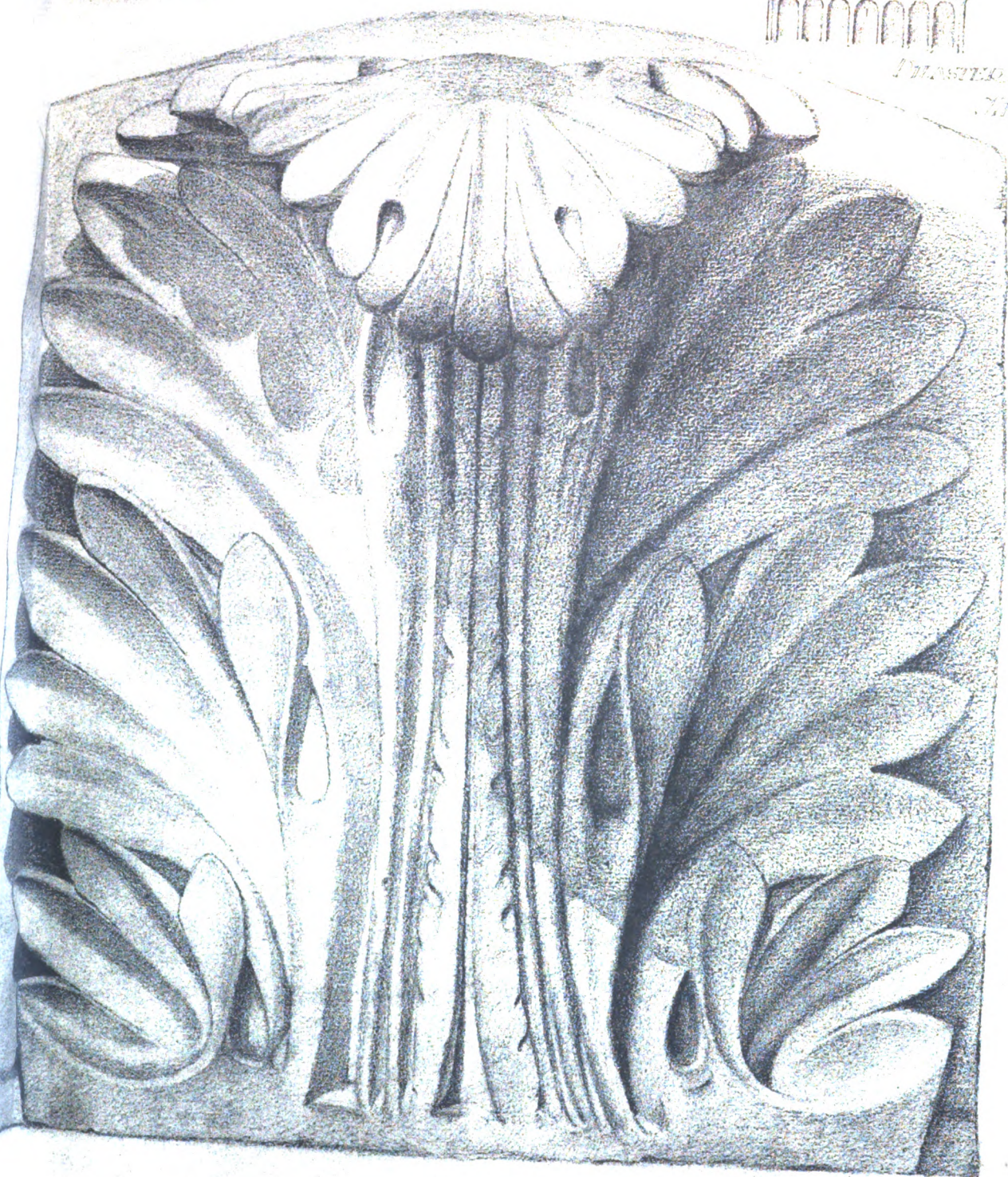
CLASSIC ORNAMENT



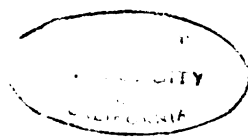
FRIEZE in
The Forum of Trajan,
Rome - 110 A.D.

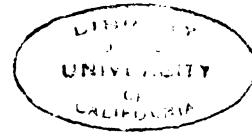


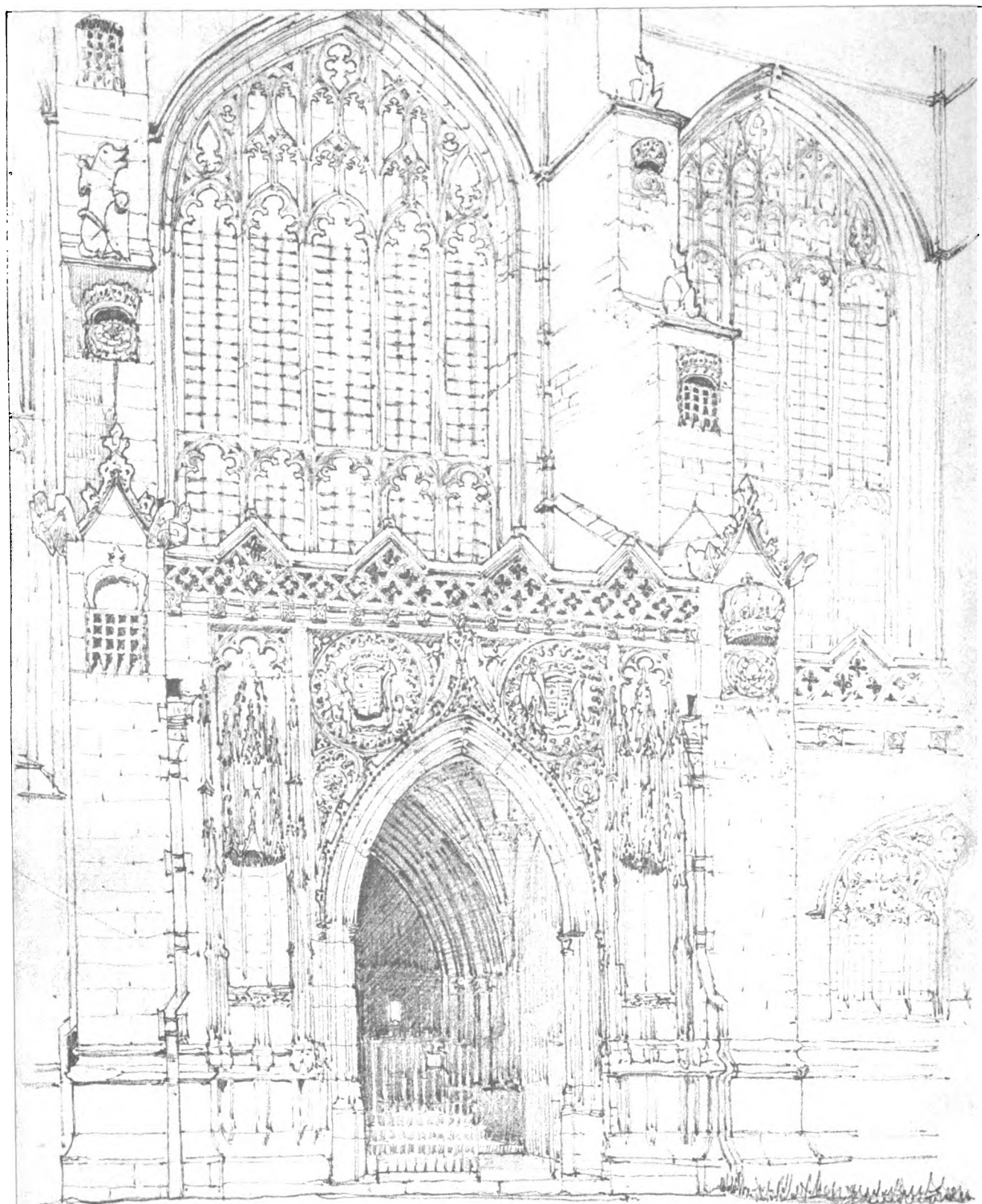
Fluted Capital from
The Parthenon.
Rome - 423 B.C.



W. Stoddard Mills, Jr. & Alexander R.
Jewett







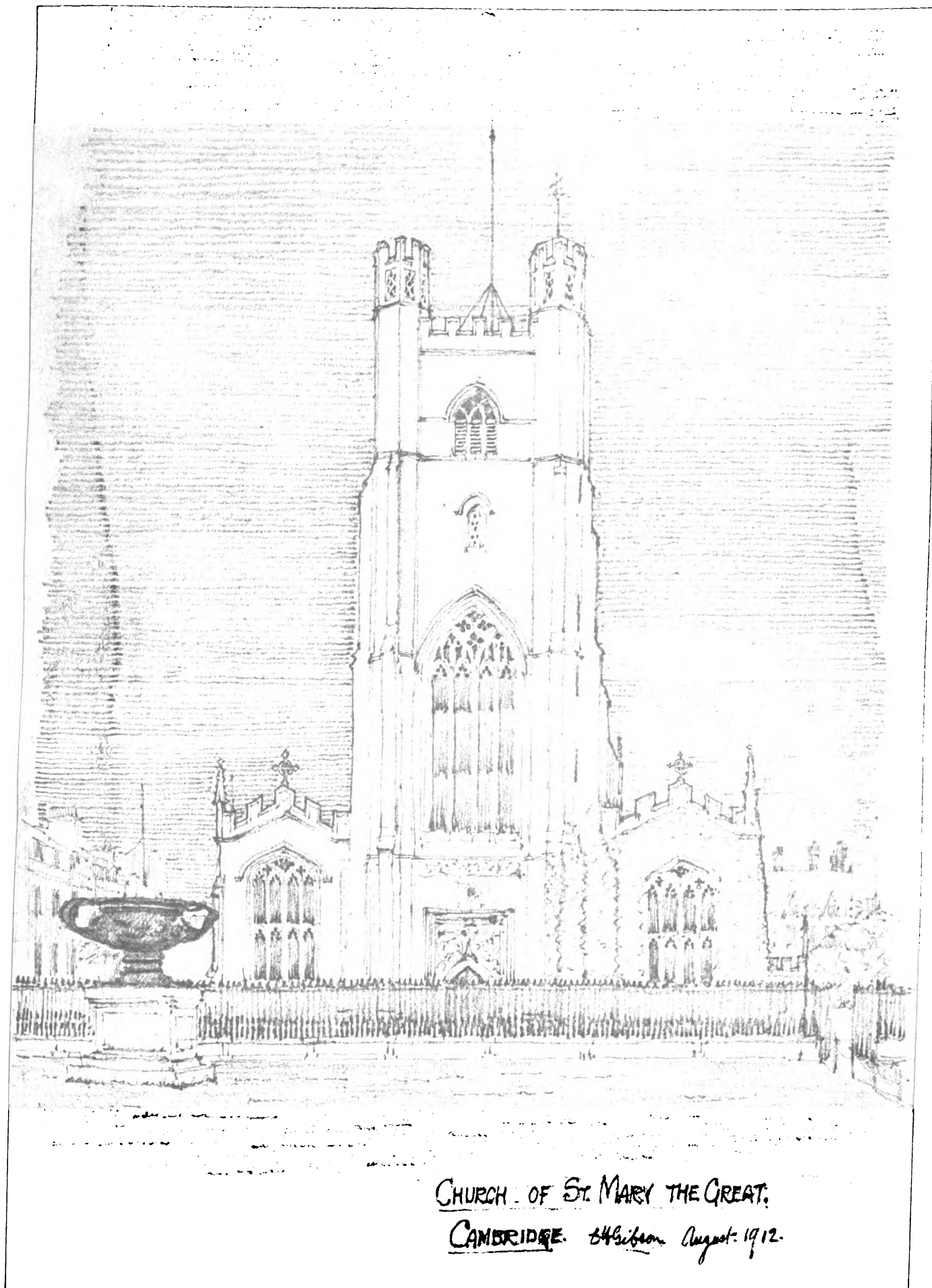
SOUTH DOORWAY. KING'S COLLEGE
CHAPEL. CAMBRIDGE.

E. H. Gibson.
August 1912.

INK PHOTO SPRAGUE & CO. 174-69 & 70 DEAN STREET, N.Y.C.

"THE ARCHITECT" TRAVELLING STUDENTSHIP. 1912.

Drawing by the holder, Mr. E. H. GIBSON



CHURCH OF ST. MARY THE GREAT.

CAMBRIDGE. E. H. GIBSON August 1912.

INK PHOTO SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.



THE ARBITRATION CLAUSE.*

(Concluded from last week.)

V.—WHERE THE ARBITRATOR IS PRACTICALLY JUDGE IN HIS OWN CAUSE.

It is important to notice that *Belcher v. Roedean School Board* (*supra*) was decided on the principle that to have made the engineer arbitrator would substantially have made him judge in his own cause. Where, however, the matter in dispute is something in which the arbitrator is only indirectly interested, a reference to him would not be prevented.

It has been held that a mere expression of opinion in favour of one party is not sufficient reason to disqualify an arbitrator unless it appears that he has so made up his mind as not to be open to argument (*Jackson v. Barry Railway Company*, 1893, 1 Ch., 238). The following passage from the judgment of Lord Justice Bowen in that case is still good law: "It was an essential feature in the contract between the plaintiff and the railway company that a dispute such as that which has arisen between the plaintiff and the company's engineer should be finally decided, not by a stranger, or a wholly unbiassed person, but by the company's engineer himself. Technically the controversy is one between the plaintiff and the railway; but virtually the engineer on such an occasion must be the judge, so to speak, in his own quarrel. Employers find it necessary in their interests, it seems, to impose such terms upon the contractors whose tenders they accept, and the contractors are willing, in order that their tenders should be accepted, to be bound by such terms. It is no part of our duty to approach such curiously coloured contracts with a desire to upset them, or to emancipate the contractor from the burden of a stipulation which, however onerous, it was worth his while to agree to bear. To do so would be to attempt to dictate to the commercial world the conditions under which it should carry on its business. To an adjudication in such a peculiar reference the engineer cannot be expected, nor was it intended that he should come with a mind free from the human weakness of a pre-conceived opinion. The perfectly open judgment, the absence of all previously formed or pronounced views, which, in an ordinary arbitrator are natural and to be looked for, neither party to the contract proposed to exact from the arbitrator of their choice. They knew well that he possibly or probably must be committed to a prior view of his own, and that he might not be impartial in the ordinary sense of the word."

In a later case (*Freeman v. Chester Rural District Council*, 1911, 75 J.P., 132) the facts were as follows:—There a contractor brought an action to recover the price of certain works constructed for a local authority under a contract which provided for the reference of disputes thereunder to the engineer of the local authority. In answer to a summons to stay proceedings under Section 4 of the Arbitration Act, 1889, he challenged the conduct of the engineer in relation to the works, the question in dispute being whether the engineer had not precluded himself by his own admissions from saying that the works had not been completed to his satisfaction, and that the period of maintenance had not expired.

The Court (affirming the decision of Mr. Justice Lush), in the exercise of the jurisdiction conferred upon it by the Arbitration Act, 1889, refused to order the action to be stayed.

The Master of the Rolls said: "Corporations are, in my opinion, often too fond of putting officers of theirs in the position of engineers under a contract, and these officers forget that, as they are performing other duties to the corporation, there may arise a conflict between their duties in these other offices and their duties as engineers under the contract which may give rise to unfair treatment of the contractor by the zeal with which they perform their other duties. Of course, if you have exalted an officer of that kind as the arbitrator under the contract, you cannot say, merely because he is an officer, that therefore he is an unfit judge; but if facts subsequent to the contract have given rise to a substantial dispute in which there are allegations of continued unreasonableness on his part, and that is the real dispute between the parties, I think we should not be acting in the real spirit of the law if we shut the doors of the Court to such a dispute, and forced it to be referred

to arbitration." What they relied upon was his professional honour, his position, his intelligence; and the contractor certainly had a right to demand that whatever views the engineer might have formed, he would be ready to listen to argument, and at the last moment to determine as fairly as he could, after all had been said and heard.

VI.—WHERE THE PERSONAL CONDUCT OF THE ARBITRATOR COMES INTO QUESTION.

The cases already cited have this common feature: the conduct of the arbitrator himself did not form the subject-matter of any of the disputes. In certain recent cases, however, the Courts have laid down a very clear principle applicable in such circumstances. It seems that in considering the question whether a person who is the servant of one of the parties can act as arbitrator in a dispute, the Court will consider the nature of the question which he has to decide. In *Blackwell & Co. v. Mayor, &c., of Derby*, 1909, 75 J.P., 129, the plaintiffs had contracted to carry out certain tramway work for the defendant corporation. The engineer had given a certificate but had held back a sum of £1,500 under a penalty clause for delay. The company having brought an action, the corporation objected that under the arbitration clause the dispute must be referred to the arbitration of the engineer. To this the company objected on the ground that their case was that the engineer did not allow them to have proper facilities for proceeding with the work. The Court of Appeal refused to stay the action, Lord Justice Buckley saying: "The fact that the referee was the officer of the corporation was not sufficient ground, but the point is here that the contractor's case—whether true or not is a matter to be determined—is this: 'I could not complete my contract in time, and the reason why I could not complete it in time was that you, the contractual referee, were an unreasonable person. You hindered me in every conceivable way; you would not let me deposit my materials in such a way as it is usual to allow me to deposit my materials—in advance of my work—you placed all sorts of impediments in my way.' How could you expect him to say, if he is a person of any character at all, that the acts which he did were unreasonable acts? It is not human nature to suppose that he can properly determine that he himself is an unreasonable person. That is the subject of the dispute. . . . I think that there is sufficient reason why the matter should not be referred, being such as this is, to this particular gentleman."

To this extent, then, have contractors secured emancipation from the arbitration clause; but the principle laid down by the Court of Appeal is not likely to be extended. The Courts are very jealous of any interference with contract. The fact that this jealousy exists makes it impossible for a contractor to hope to escape the other obligations imposed upon him by the contract. If he has underestimated the amount of excavation necessary, or the amount of materials to be provided for completion, the fault and the loss will be his. Again, if he has under-estimated the time which the works will take, or if unforeseen circumstances for which the employers are not responsible have arisen to cause delay, the loss is the loss of the contractor. It is difficult to see how any of the losses arising from these causes can be avoided if the contractor has signed a contract which binds him hand and foot.

The most recent case on the subject which was heard by the Court of Appeal in March last, namely, *Aird v. Lord Mayor of Bristol*, Court of Appeal, 1912, shows that the Court will not extend, although it still adheres to, the principle above laid down. If the conduct or dealings of the engineer himself is in question, the matter will be taken from his hands. In that case the dispute arose under a contract entered into between the plaintiffs and the defendants, and dated March 17, 1902, for the construction and completion of a new wet dock at Avonmouth, an entrance lock, two entrance piers, a new wall, and other work in connection therewith.

The contract contained an arbitration clause referring all disputes arising during the progress, or after the completion of the works, concerning the works or their cost, or the quantity or quality of the materials, or in respect of any additions, omissions, alterations, or deviations made to, in, or from the works or any part of them, to the engineer having the superintendence and control of the works of the Docks Committee of the Council of the City of Bristol, who should be competent to enter upon the subject-matter of such dispute with or without formal reference or notice to

* A Paper entitled "The Effect of Recent Decisions upon the Arbitration Clause," by W. Valentine Ball, M.A., Barrister-at-Law, read before the Institution of Municipal Engineers in London.

the contractors or the corporation. The value of the work done and materials supplied under the contract was £1,923,977 9s. 4d., in respect of which the defendants had paid £1,752,761 10s. 11d., and the action was brought by the plaintiffs to recover the balance—namely, £171,215 18s. 5d.—and damages for breach of contract.

The summons taken out by the defendants for an order staying the action, so that the dispute between the parties might proceed to arbitration in accordance with the arbitration clause, was opposed by the plaintiffs on the grounds (*inter alia*) that the engineer had, by his conduct in his capacity as engineer under the contract during the progress of the works, rendered himself unfit to be arbitrator.

Lord Justice Vaughan Williams, after pointing out that there was nothing in the facts as disclosed to show that the engineer had been guilty of any misconduct, said that of all the matters which had been alleged against the engineer, there were really only two of any substance. As regards these they did not arise out of the original agreement between the parties, they did not fall within the schedule of prices where the price paid depended on the original schedule. The affidavits stated that specific agreements had been entered into, and that the engineer had departed from them. In such a case it was true to say that in so far as the engineer differed from the statement that agreements had been entered into and actually denied it, he was really acting as arbitrator in his own case. The question therefore to be determined was whether the engineer had in fact entered into these agreements, and whether he had departed from them. In his judgment, there was a strong *prima-facie* case made as to the existence of these agreements, as well as a *prima-facie* case of a departure from them. Putting it shortly, he was of opinion that in these two matters it was not desirable that the engineer should act as arbitrator. Under these circumstances, therefore, the appeal failed. In the event the trial was allowed to proceed.

The last case to which Mr. Ball referred was the decision of the House of Lords in *Roberts v. Hickman* (only reported in the second supplement to *Hudson's Building Contracts*). It was there held that the grant of a certificate by an architect will not be a condition precedent to the builder's right to sue, if, by writing letters to the employer, and allowing himself to be influenced by his views, the architect has disqualified himself from acting judicially, although guilty of no fraud or improper conduct.

It appears that in this case the architect had written to the contractor: "I regret I cannot enclose certificate, my clients' instructions being that the certificate I next give you is to be a final one, including for a complete settlement of the work done, into which I shall be prepared to go after Easter." He also wrote on another occasion: "Had you not better call to see my clients, because, in the face of their instructions to me, I cannot issue a certificate, whatever may be my own private opinion in the matter."

In this case, as will be seen from the above extract, the conduct of the architect as arbitrator was not considered; it was his conduct in relation to the grant of certificates which was under discussion.

The Court held in effect that he had so mistaken his position and lost his independence by listening to the employer that the grant of a certificate could no longer be considered a condition precedent to the contractor's right to sue.

VII.—SUMMARY OF THE CASES.

The contractor will not be compelled to submit to the decision of the employer's engineer as arbitrator (1) if the matter in issue is an unseemly personal dispute raising a vindictive feeling between the engineer and the contractor, and the engineer has so strongly expressed his view that it amounts to a prejudgment (*Nuttall v. Manchester Corporation*, 1893, 8 T.L.R., 513); (2) if the nature of the dispute is such that the cross-examination of the engineer is essential; (3) if the matter in issue is something outside the original agreement—*e.g.*, a dispute as to whether the engineer and contractor had agreed to vary the original agreement; (4) if the conduct of the engineer himself is practically the only point in dispute.

VIII.—SUGGESTED REFORMS.

Although there are probably hundreds of contracts now in force in various parts of the country in which the arbitrator is the engineer of the employer, circumstances may arise at any time which will prevent his acting when the time for his services arrives. Is it not therefore time to consider what alternative to adopt? Here are a few of them.

(a) *The Deletion of the Clause.*—Deletion of the arbitration clause would involve recourse to legal proceedings for the settlement of all disputes. Doubtless it might open a vista of litigation, and would therefore be rejected on that ground; but there is one fact in this connection which it is well to bear in mind—namely, that a dispute arising under a building or engineering contract would not come before the Court and a jury, but before a special referee (*i.e.*, an engineer appointed by the Court), or before an official referee. In the result the proceedings would be very similar to those which would take place before the arbitrator named in the contract. It is a trial of this kind which takes place if litigation ensues owing to the failure of an arbitration clause. Save that a reference to an official referee is reference to a lawyer, it very much resembles a reference to arbitration.

(b) *Reference to an Independent Arbitrator.*—Reference to an independent arbitrator appears to present almost if not quite as many objections as a reference to the Court. An independent person, even if he is an eminent engineer, has to be taught all about the nature of the work at the expense of the parties to the dispute. Witnesses to fact must be called in enormous numbers, while the expert witness, whose fees are considerable, must also be called at the expense of both parties. In the result the proceedings may drag on for days or even weeks. There are various ways of selecting an independent arbitrator. He may be named in the contract. If named, his independence may to some extent be affected by his being brought into business contact with one or other of the parties; but they would no doubt select a man who was not likely to have any such dealings with them. His appointment or selection may also be left to the President of the Institution of Civil Engineers for the time being, or to some other eminent personage. To leave it to a person who may happen to be president of an institution for the time being does not appear to be a very wise proceeding, inasmuch as the capacity of such person to select and appoint an arbitrator is a matter of pure speculation. It is much wiser, if it is desired to have an independent arbitrator, to leave him to be selected by agreement when the dispute arises, or, failing agreement, to be nominated by some eminent engineer of known capacity.

(c) *An Amendment of the Arbitration Clause.*—All the above proposals are open to the objection that they entail the expense inseparable from the appointment of an independent person. Numerous questions might arise in relation, say, to a sewerage contract, which could be decided by the engineer on the job without any objection being raised by the contractor. Suppose, for instance, the question was whether the cement supplied was capable of withstanding the prescribed tests. To have to refer such a matter to arbitration would be ridiculous. Again, the question whether a delay of, say, two days was justifiable could be decided in five minutes by the engineer who had been on the job, but could not be decided until after a long hearing by an independent arbitrator. Short of arbitration by the engineer "on the job," the next best thing is for the parties to retain their hold over the selection of the arbitrator by means of one or other of the above methods. At present the alternative to the arbitrator mentioned in the contract is the settlement of the matter in dispute by litigation. It would seem that by slightly modifying the usual form of arbitration clause the desired result can be attained.

The following suggestion may here be made: Frame the arbitration clause so as to leave the decision of every question arising under the contract to the engineer, but subject to a proviso that, should it appear to the Court on an application to stay any action or proceeding brought in relation to the contract that the engineer is disqualified from acting as arbitrator, the matters in dispute will be referred to an engineer, to be agreed between the parties, or, failing agreement, to be nominated by the President of the Institution of Civil Engineers. Another alternative is suggested by Mr. E. J. Rimmer, in his "Arbitration Clause in Engineering Contracts" (Constable & Co.). It is that, while preserving the finality of the decision of the engineer upon certain special points, a proviso should be added to the arbitration clause, stating that if any action is brought the defendant may either (a) have the action stayed and remitted to the engineer, or (b) have the matter referred to an independent arbitrator appointed in one or other of the manners above suggested. The same gentleman suggests that the decision in *Aird v. Bristol Corporation* (*supra*) may be got over by a new clause preventing the engineer entering into

any agreement with the contractors unless certain conditions are complied with. The actual wording of the clause would have to vary according to the other conditions of the contract and the circumstances of the case.

It might be argued that such an agreement would operate as an attempt to oust the jurisdiction of the Court; but it really would not have this effect. It simply means that the various steps above mentioned must be taken before the law courts can be asked to decide a dispute or refer a matter to an official or other referee.

IX.—CONCLUSION.

"It will be noticed," said Mr. Ball in conclusion, "that I have been compelled to base some broad general propositions on but a few cases. The fact that they are so few would seem to show that the demand for reform is not one of great exigency. But my researches in this matter have led me to think that what the local authority, which is responsible to the ratepayer, desires in relation to a contract is certainty. Certainty, so far as humanly possible in the matter of price and time; certainty that work shall be done under trustworthy supervision; and last, but not least, reasonable certainty that disputes shall be settled economically and expeditiously by a man in whom they have confidence. The suggestions I have put forward may, if adopted, avoid a good many of the pitfalls laid bare by the cases which I have cited. The actual conduct of proceedings in an arbitration is hardly within the scope of the present paper. I cannot, however, conclude better than by reminding him who is about to act as arbitrator of the duty of a judge. Lord Bacon, in his essay entitled 'Of Judicature,' wrote: 'Judges ought to be more learned than witty, more reverend than plausible and more advised than confident.' And again: 'Patience and gravity of bearing is an essential part of justice; and an over-speaking judge is no well-tuned cymbal. . . . The parts of a judge in hearing are four—to direct the evidence; to moderate length, repetition, or impertinency of speech; to recapitulate, select, and collate the material points of that which hath been said; and to give the rule or sentence.'"

Mr. Frank Latham, President, proposed a very hearty vote of thanks to Mr. Valentine Ball for the great amount of pains, time, and thought bestowed upon the preparation of his admirable paper.

Mr. H. Boot, in seconding the vote, said that as an engineer he had on many occasions stood in the position of arbitrator, expert witness, and also as defendant and plaintiff. He could therefore from his own experience testify that very largely what Mr. Ball had described in his paper did take place. In his own opinion engineers, especially when acting for corporations, were not the right persons to be appointed arbitrators. Unfortunately that position was thrust upon them by the town clerks. It was held that this was the only way to avoid litigation—and that in itself was, of course, always a good thing to do.

Mr. H. Percy Boulnois claimed some knowledge of the subject because he had been surveyor of Exeter, Portsmouth, and Liverpool. The usual arbitration clause making the engineer an arbitrator was, to his mind, a mistake. There were engineers and engineers; some of them started with the idea that a contractor was like a poacher, and that the surveyor should play the part of a gamekeeper. If that was so, was it fair for the engineer to act as arbitrator? Would it not be better for an independent person to be appointed? It seemed monstrous that a contractor should sign a contract containing such a clause as that, for he was binding himself down to the engineer not only as a master during the execution of the work, but also as arbitrator upon his own doings. The contractor always had great trouble to prevent the engineer from so acting. To do this it was usually necessary to prove the engineer had some sort of bias. Hitherto the Courts had been shy in throwing out the engineer as arbitrator. Points might arise in the mind of an independent arbitrator which would escape the minds of both parties. Again, a number of legal points arose in disputes. The engineer was not a lawyer; neither was the arbitrator perhaps; but the latter could call in the assistance of a legal assessor. The Official Referee was nearly always a lawyer. It was, however, much more difficult for witnesses to explain technical points to a layman. He (the speaker) therefore held that if there was to be a reference at all it was far better for it to go to an expert engineer than to an Official Referee. The cost of arbitration was not as a rule very large unless very big sums were involved. The paper was, he considered, a most valuable

one, and it had given him a number of hints as well as a great deal to think about.

Mr. A. J. Martin said his own experience had been first as a subordinate municipal engineer and then as a consulting engineer. A consulting engineer was less liable to pressure from any one of the many municipal authorities he worked for than a municipal officer who gave his whole time to one. Many authorities entertained mistaken ideas of the position of the municipal engineer who was carrying out work for them. They considered he was acting as their servant and that it must be his business to give effect to any of their views with respect to the contract. It was necessary for the engineer to disabuse their minds of that by making it clear that he was not their servant, but one who had to deal out even-handed justice between the parties. The consulting engineer could snap his fingers at the local authority. However, the engineer possessed one important qualification for the position of arbitrator in his intimate knowledge of the progress of the work. Contractors were not only ready but willing to accept the arbitration of the engineer under whom they were working, and in nineteen out of twenty cases they were satisfied with the award. That, he thought, was a high and well-deserved tribute to the fairness and impartiality of the engineering profession; he was firmly convinced there existed no body of men with a higher sense of professional conduct. It would be a mistaken policy to do anything to detract from the responsible position of the engineer unless there was grave reason for so doing, for it was that sense of trust which had elevated the profession to its present position. It was, however, only fair to give the contractor a final court of appeal.

Mr. A. E. Strickland believed the fairest way of dealing with a contractor was to meet him in an honest, straightforward way. Personally he did not like the surveyor as arbitrator of his own scheme; in some cases it might have a satisfactory result, but it might also lead to trouble. It seemed to him that they should look forward to the formation of an Association of Arbitrators.

Mr. J. R. Fayers could not agree that the lawyer element should come into cases of arbitration, as he believed the arbitrator should really be of the profession to which the matter dealt with belonged. It was much easier for such a one to grasp the whole circumstances. There were, of course, legal aspects of a case which a lawyer might be required to clear away.

Mr. C. Biggs said he had come to the conclusion that directly they talked of extras they began to talk of the inexperience of the engineer. If they could have a perfect design—as for a building—they were all right. But the architect and the builder were in a different position to the engineer and the contractor. In the former class of work there should be no extras, for everything was known from the foundation to the roof. But there was no engineer in the world who could say he was going to work out a perfect design, for directly the work commenced there would be changes. Who was to arbitrate as to whether such changes were necessary? He always thought the main question that the engineer of the work had to decide was whether the work was carried out satisfactorily and with satisfactory materials. If there had been changes the cause of these changes should be left to an arbitrator. He had known scores of instances where there was no trouble; but cases arose where an independent authority must be appointed to decide the differences between the parties.

Mr. Frank Latham, the President, said a good many engineers and architects seemed to think that a contractor had to be watched as a cat watched over a mouse. But a contractor was of considerable value to the engineer, a great deal more valuable than the builder was to the architect where the work was straightforward. The difficulties in an engineering contract were more than could be seen at first glance. The contractor took the whole burden on his shoulders; it meant very hard work and great anxiety. Every engineer ought to feel very much gratified that there were contractors who would come forward and tender for his work. It was, of course, to the contractors' advantage to execute the work satisfactorily. Otherwise his name was spread broadcast to the detriment of his business.

The vote of thanks was then passed.

Mr. W. Valentine Ball having replied to the points raised, the meeting terminated.

THE Hull Education Committee have instructed the City Architect to prepare plans for an open-air school at Dairy-coates.

WATER-COLOUR DRAWINGS BY MISS EMILY PATERSON.

Nor for the first time in the course of our peregrinations have we found that greater interest attaches to what is not the subject of invited inspection than to the latter. This is the case respecting Miss Paterson's collection of water-colour drawings in France, Switzerland, and elsewhere, now on show at the McLean Galleries. For after a careful survey of these works it was a sensible relief to wander into another room and to view a miscellany of pictures by Continental artists. We may regret this, as our chivalrous instincts lead us to the desire ever to speak well of ladies and of all they say and do; but there is, unfortunately, so little to be said in favour of the present Exhibition. Perhaps a severe critique may be condemned as unwarranted, where about thirty per cent. of the works admit of praise of some kind; but we fear that our desire to strain a point here and there may be partially accountable for raising the percentage.

Speaking really critically, only eight—or perhaps nine—out of the fifty-three studies satisfy, and even these not completely. The keynote of the Exhibition is woolliness of technique and lack of inspiration in treatment. "Lauterbrunnen" is decidedly worthy of inspection, with its snow-clad slope, well-suggested snow-laden skies, and sympathetically touched-in pine trees. "The Maas" is a bright and pleasant piece of composition, a quality unfortunately conspicuously absent in general. Again, "Becalmed" and "The Green Ship" merit attention, but Miss Paterson is not an adept at depicting water. "Sunset" shows an extremely clever sky, where the suggestion of the sun behind the dark strip of cloud is effectively portrayed, and where the lapping blue waters are better than in most instances. And this latter criticism, too, may be offered in regard to "Boats, Douarnenez" (26), which is a nice and bright morceau, the boats and the "distance" also being well managed. "Nieuwe Haven, Dordrecht," is easily one of the best in its realism, brightness, atmosphere and colouring.

But the undoubted best, the picture without a rival claimant, is "Moonlight" (50), an excellent little piece, though even here the water is not a success, looking more like a country roadway. "Bernese Oberland" (49) and (13) are clever, but are not equal to "Lauterbrunnen." We might, in conclusion, refer to "The Thames," where the neutral toning is good.

As for the rest, we can but say that, regarding landscape and seascape and architecture, the effect generally is poor and the technique unsatisfactory.

DRAWINGS AND STUDIES BY OLD MASTERS.

Messrs. DOWDESWELL & DOWDESWELL, of New Bond Street, have now on exhibition the third series of sketches by old masters, including the school of Clouet. It is safer to talk of the latter's "school," as very few (if any) of the exhibited works are identified as the actual production of Clouet himself. There is, of course, a large section of the public which delights in seeing the seedlings from which were grown the fruits of genius, but our own interest has ever been languid in this respect, when the seedling takes the form (as is too often the case) of a multitude of rough, scratchy lines, which a child trained on the Ablett system would laugh to scorn. When, however, as with such work of Vernet's, the studies may be considered in the light of portfolio sketches, it is different. Vernet's studies of trees here exhibited are both of them sympathetic. And Boucher's study of a nymph (in sanguine) is delightful, and is redolent of the finished Boucher. Largillière's portrait group of "Two Young Noblemen with a Dog" is one of the best exhibits.

The school of Clouet is represented by twenty portraits in pencil and wash, with chalk as an additional medium in eleven instances. Being contemporary with the wearing of a neck-ruff, there is a sameness in general effect, heightened by the almost invariable monotony of treatment in regard to the ladies' delicately tinted faces. Nor is this effect much disturbed by sundry markedly character-differences in these faces; all would seem to indicate good portraiture, that of the Princesse de Condé being very charming, and the piquant expression on No. 5 proving attractive. The three portraits of noblemen are stronger in touch than the rest. The technique is altogether suited to the class of subject.

Of the Italian school there are thirteen works. A portrait of a boy by Parmigiano is an uninteresting outline profile in water-colour, but this artist is more pleasingly represented by a "Virgin and Child," a forcible little sketch

in pen and wash. Francesco Guardi is in evidence with a slight sketch of a Palace staircase; nowadays out of the ordinary, but still fairly suggestional. A seventeenth-century auto-portrait of a young painter, executed in black and red chalk, is sufficiently vigorous. It is always difficult to produce earth-worm designs, as portrayed on overhead surfaces, but the sixteenth-century sketch in gouache for a painted dome is distinctly effective, with its figure-groups on thick branches of trees. "St. Michael Destroying the Demon" (attributed both to Dosso Dossi and Lelio da Novellara) is pictorial and well-composed, but the demon looks entirely undemoniacal. "Christ Scourged" (Early North Italian), a pen and sepia-wash drawing, shows the martyr too dwarfed in proportion. "Christ and Satan" (attributed of old to Silvestro Doni), in pen and wash, is satisfactory in composition.

The Dutch and Flemish schools are represented by a similar number of works. Vandyke's "Adoration of the Magi" is an excellent pen-and-ink sketch, and (as might be expected) composes well. Langendyk's "The Siege" is one of the best on exhibition, and is full of verve. Oostsamen's "Adoration of the Magi" is an effective composition in black pencil heightened with white executed on very dark brown paper.

Five drawings are from the Swiss school. We are not attracted by "The Supper Party of a Guild," where the figures are all portraits, and generally give the appearance of posing; the whole effect is stiff. Tobias Stimmer's title-page design is an elaborate composition with virile technique. H. Nüscheler's "Daniel and the Lions" is very decorative, and his "Mary Magdalen Anointing the Feet of Christ" is a satisfactory piece of grouping.

The catalogued exhibits of the English school are few in number and not very interesting, though some of the Gainsborough landscapes are passably attractive. But the whole exhibition is not inspiring.

THE PICTORIAL POSSIBILITIES OF WORK.*

Work to-day is the greatest thing in the world, and the artist who best records it will be best remembered. Work has always been an inspiration to artists from the time when we were bidden to earn our bread by the sweat of our brow, till now, when most of us are trying to forget the command, and live like ladies and gentlemen.

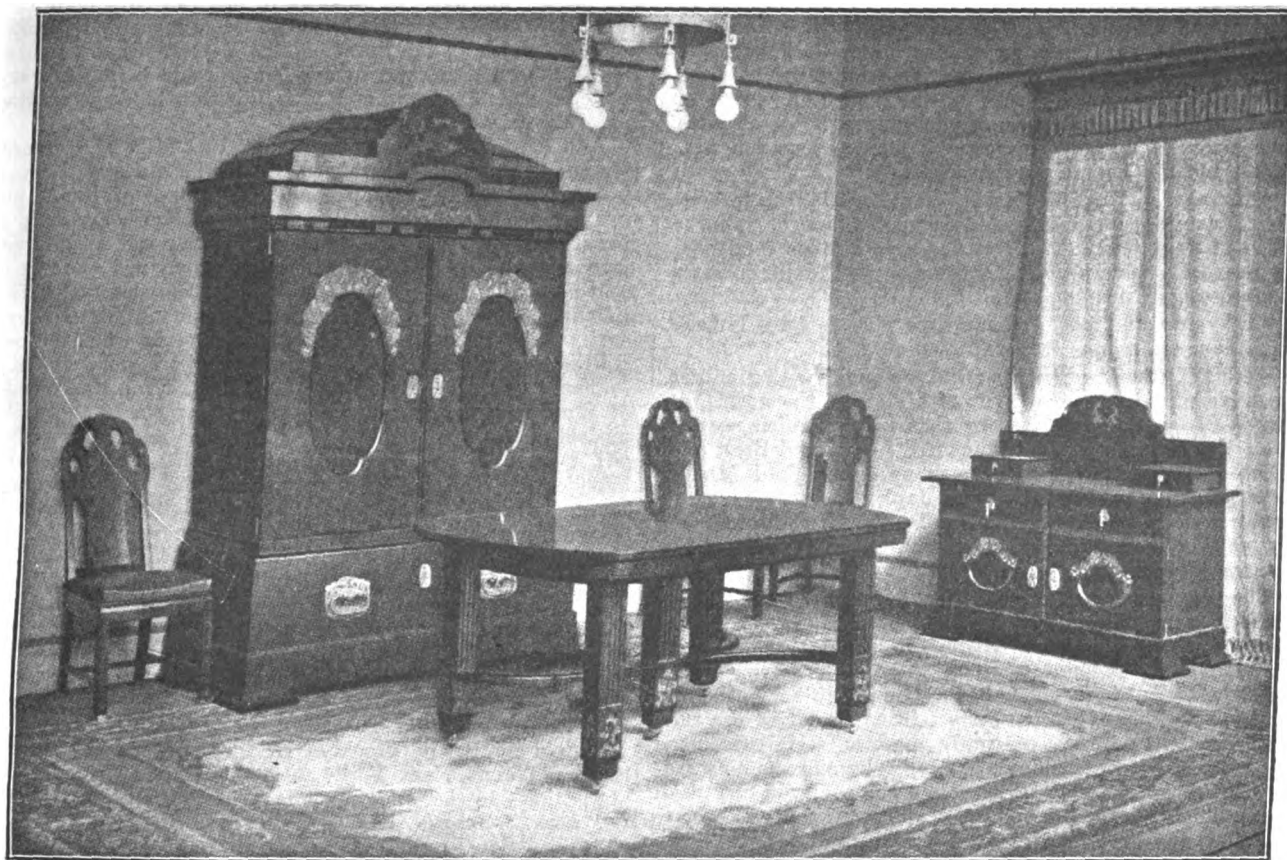
Under the Church work the building of the Tower of Babel and the Temple were the subjects of endless imaginings by painters, sculptors, and graveurs who never assisted at the functions they illustrated. Painters who sat in their studios hundreds of years after the towers and temples were designed and destroyed have showed what they imagined the towers and the temples looked like. This—this sort of creation or invention—we art students in America called "genius work" because it was "done out of our heads." In Europe it is called "scholarly," and is concocted from a classical dictionary; a trip for a few weeks to Greece or Italy is useful but not necessary, and adds to the expense; illustrated postcards may be used instead.

Now educated people, cultured people, take such painters seriously—and pay shillings to sit in darkened chambers and brood. These are carefully but sadly illuminated, and the spectators pursue with diligence, scarce looking at the exhibits, the remarks of critics who prove conclusively that these painters show exactly what the world was like, what buildings were like and how they were built, and how the builders worked according to the bookman and archæologist.

Now as to these popular forms of art—the backbone of academies, the source of shillings—I know, for I am an academician—I have nothing to say. The results, in a few instances, have been works of art because of excellence of technique. But the man with the greatest imagination is the man with the greatest information about his own surroundings, which he uses so skilfully that we call the result imagination, and this is the way the greatest art of the world has been created.

I am not disputing the power, in their day, nor the charm they still have—for the very few who understand—of Cimabue, of Giotto, of the painters of the Campo Santo at Pisa, when they painted the subjects I have mentioned, nor of Pintoricchio—he put work in the background of his paintings, as Dürer did in his prints. There are compositions by Bellini and Carpaccio which show they studied work. It is strange, so far as I know, that Leonardo ignored

* A Paper by Mr. Joseph Pennell, read before the Royal Society of Arts on December 18.

MODERN EUROPEAN ARCHITECTURE.
NORWAY.[From *Arkitektur og Dekorativ Kunst*.

DINING-ROOM FURNITURE, IN INLAID MAHOGANY.—MR. CARL BERNER, Architect.

work—in his pictures—he who was such a great workman. But, with all these artists, either work was a detail or imaginative; it was never the dominant motive, never a study of work for work's sake.

The first artist I know of—though I am not an art historian—to see the pictorial possibility of work, the Wonder of Work, was Rembrandt.

Rembrandt saw that his father's mill was beautiful, and by his renderings of the windmills and the dykes of Holland proved them the great works of his little country, and showed they were pictorial. And he drew, etched, and painted them because he loved their big powerful forms, their splendid sails, the way they lorded the land and kept out the sea. They were for him the Wonder of Work, the wondrous works of his time, the works that were all about him. So strong and so powerful were these Dutch works that they have lasted till to-day, and so well were they designed that all windmills and watermills have kept their form till now. The working parts have possibly been improved, but the design has not been changed, and Rembrandt's etchings—so accurately drawn they would serve as working models—prove it. And yet Rembrandt has made a perfect artistic composition as well as a true mechanical rendering of these mills and dykes. And as Whistler said in the "Ten o'Clock," the Bible of Art, Rembrandt regretted not that the Jews of the Ghetto were not Greeks, nor did he regret the windmills were not temples.

Then came Claude and found the Wonder of Work in commercial harbours, dominated by necessary lighthouses, and in the hustling cities of Civita Vecchia and Genoa—for it is amid the work, the life of one's own time, that the Wonder of Work is to be found.

Canaletto followed, and saw in the building of Venice the same inspiration that Tintoret found in her history, Titian in her great men. And Piranesi discovered the prisons, the Carceri, to be as enthralling as the ruins of Rome.

Turner imitated Claude. Claude saw his subjects about him; Turner used Claude's motives and tried to rival his predecessor. Claude painted what he had seen in his own time; Turner tried to reconstruct his unconscious rival's facts out of his head, and failed even in his rendering of

work about him, signally in "Steam, Rain, Speed," where an impossible engine conducts itself in an incredible fashion in a magnificent landscape. Turner was not here trying to carry on tradition—the only thing in art—but to *embêter les bourgeois*.

Turner's Carthage would not stand up if built—Claude's palaces do. Turner, too, defying Ruskin—Ruskin anathematising workaday England—was a spectacle. But Turner was sometimes in the right, with Constable and Crome, and they, and not Ruskin, have triumphed. Turner had magnificent ideas, wonderful colour sense, grand composition. But when he came to fact he was often ridiculous or pitiful, simply because he had not observed work, noted facts—and to paint work one must study work.

It is far easier to paint a heavenly host or a dream city in one's studio than to make a decoration out of a group of miners, or to etch a rolling mill in full blast. Yet one can be as noble as the other, as Whistler proved when he showed for the first time how in London "the poor buildings lose themselves in the dim sky, and the tall chimneys become campaniles, and the warehouses are palaces in the night, and the whole city hangs in the heavens, and fairyland is before us." This is the Gospel of the Wonder of Work.

Though I never studied under Whistler—never was his pupil—he is and always will be my master—the master of the modern world, the master who will endure because he glorified the things about him, the things he knew, by "The Science of the Beautiful." What are the Thames etchings—"Wapping," "The Last of Old Westminster," "The Nocturnes"—but records of work?—a fact most critics have never realised. But Whistler was a many-sided—a so many-sided genius that his many essays in many fields are only just becoming known, and this study of work—the most difficult study in the world, under the most trying conditions—was abandoned by him, but not till he said what he wanted in the ways he wanted, not till he had made a series of masterpieces which live and will live for ever.

But there was a man—all the great have gone from us in the last few years, which accounts for the momentary notoriety of the small—there was a man who gave his later life to the Wonder of Work—Constantin Meunier. Listen.

"Un jour—Meunier approchait déjà de la cinquantaine—Camille Lemonnier l'emmena dans le Hainaut: il devait y faire quelques illustrations pour *La Belgique*. Ce voyage de Meunier à travers le Borinage lui fut une révélation. Il s'y découvrit lui-même, il y découvrit son art. Dans ce sombre paysage de fumée et de feu, dans le haletement formidable des fabriques, parmi les farouches mineurs et les puddleurs et les verriers, toute une humanité damnée à la peine, son âme tragique s'emplit de cette pitié et de cette admiration qui devaient résonner à travers tout son art. Il avait conquis son propre domaine.

"Meunier a conquis à l'art la beauté spéciale de la nouvelle industrie: la formidable fabrique, pleine de lumière sombre et de tonnerre, les fêtes flamboyantes des fonderies, la puissance grondante des machines. Et toujours cette tendance est au monumental.

"L'hymne au Travail chante avec plus de force lyrique encore dans ses bronzes."

With Whistler it was all in the day's work; with Meunier it was his life work, and the life of his world, the worlds, as with Whistler, around him, for that is best which nearest lieth. Courbet in work had influenced Legros and Brett and Millet and Segantini, and I have no doubt Ford Madox Brown, the man too big to be a pre-Raphaelite, whose biggest picture is work—"Work in London"—the man who will one day make Manchester a place of pilgrimage because of his pictures of work and of war.

The Japanese count for a little. Repine and De Nittis, Bastien Lepage, Tissot, Ridley, and, above all, W. L. Wyllie have shown the Wonder of Work, the last on the Thames; and hundreds of imitators of these men have starved peasants, herded kine, rowed boats, and sat in harvest fields, because they thought it the correct thing to do, or else that they could work the sentimental, pathetic, socialistic game as a diversion from mummy's darling baby and the mustard-pot, dear little doggie, or poor old Dobbin. I do not mean to say there have not been, there are not, artists who have cared for the work and workers of the fields for their own sake: there are some; but I wish to speak only of industrial work.

Meunier showed without sentiment the workman at work, not with any idea of preaching about his wrongs, his trials, his struggles, his misery, but to show the Wonder of Work for its own sake, and the pictorial possibilities of workmen and workwomen in Belgium. Meunier showed that the workman was worthy of the artist's chisel, chalk, needle, and paint. There is no sentiment about Meunier; there is grandeur, dignity, and power, and from him we have learned that modern work is wonderful. Meunier was an old man when a few years ago I first heard of him and saw his work. He had then done his heroic Antwerp and his puddlers and miners in bronze, his paintings and his chalk drawings, his decorations, his great apse for the unbuilt basilica—the monument to modern work and workers. His work is decorative because it is true, and this brings up another side of the Wonder of Work. In France, Germany, and Italy the Wonder of Work around us has been made the subject of endless commissions from the State to artists mostly realistic. But records of facts, facts of one's own time, here and in America are never recorded. Go to the Royal Exchange and you will find Wat Tyler, Phœnicians, prehistoric apple-carts, and everything in the history of London that can be made into a painting of the past, and not a single record of the present. Where is the building of the Tower Bridge, the electric light works, the docks, the Black-wall Tunnel, the trams, the tube, or any of the other works by which this age, this workaday age, has distinguished itself, all of which are worth painting? In America we have imaginings of Holy Grails, Pied Pipers, Religious Liberties, when one fact in decoration about steel-works, sky-scrapers, or the Brooklyn Bridge would be worth the lot in the future, when these factless fancies are white-washed out, or made a good ground to paint on. In France men like Henri Martin have painted decoratively, yet realistically, the harvest of last summer; and Puvis de Chavannes, first of all, magnificently showed the way to combine the old decoration with the new realism. His life work at Amiens is pure convention, so are his designs in the Boston Public Library and in the Sorbonne, but they are the most perfect examples of decorative, imaginative, conventional work in the modern world.

But at Rouen and Marseilles he has treated decoratively modern subjects, or, rather, he has used modern motives. At Rouen, the city with its spires and chimneys, its new bridges, as seen from Bon Secours, prove the Wonder of Work; in the foreground are modern figures, greeting the Spirit of old

France. At Marseilles there are two subjects in which symbolism and realism, modernity and work are harmonised—the most difficult problem to solve—but Puvis has solved it, and proved himself the greatest if not the only decorator since Piero della Francesca, the supreme master of decoration. Raphael, in the Stanze of the Vatican, was a decorator of his own time, and so was Pintoricchio in the Library at Siena, and Mantegna at Padua, for they made decoration out of the life about them.

And here John Lavery has made, in Glasgow, a decoration out of shipbuilding which is worth the whole wall coverings of the Royal Exchange and the House of Lords put together. There is, I know, the Graves Brothers' work at Streatham—only no Streatham is in them; and some others have done things in South London, which are scarcely of South London, but some are amusing. But decoration is a difficult matter, and Lavery has done much for Glasgow. And I hope something more will be done in Chelsea Town Hall. And Moira has shown his power in various places.

From the very beginning I have cared for the Wonder of Work; from the time I built cities of blocks and sailed models of ships to them across the floor in my father's office, till I went to the Panama Canal, I have cared for the Wonder of Work. There are others who care—Brangwyn has cared, and so have Santer, Muirhead Bone, and Strang. Way, Cameron, Bone, and Brangwyn have cared for the building up and the breaking down, and Brangwyn for life—the life of the workman, possibly because of his Belgian and sea-faring education or his knowledge of Meunier, his countryman. And there are Belgians like Baertsoen, and Frenchmen like Lepere, Gillot and Adler, and Italians like Sartorio, and the great German Menzel.

But it is to America we must turn, and here Seymour Haden's "Breaking up the Agamemnon" is notable; to White's etching of Brooklyn Bridge, Cooper's sky-scrapers, Alden Weir's New York at night, Childe Hassam's high buildings—to these one must look for the modern rendering of work. I have tried to do what I could in New York, Chicago, San Francisco, the coal mines of my native State—Niagara—and at Panama; and whatever their worth, I can only, to end with, tell you and show you the Wonder of Work as I see it.

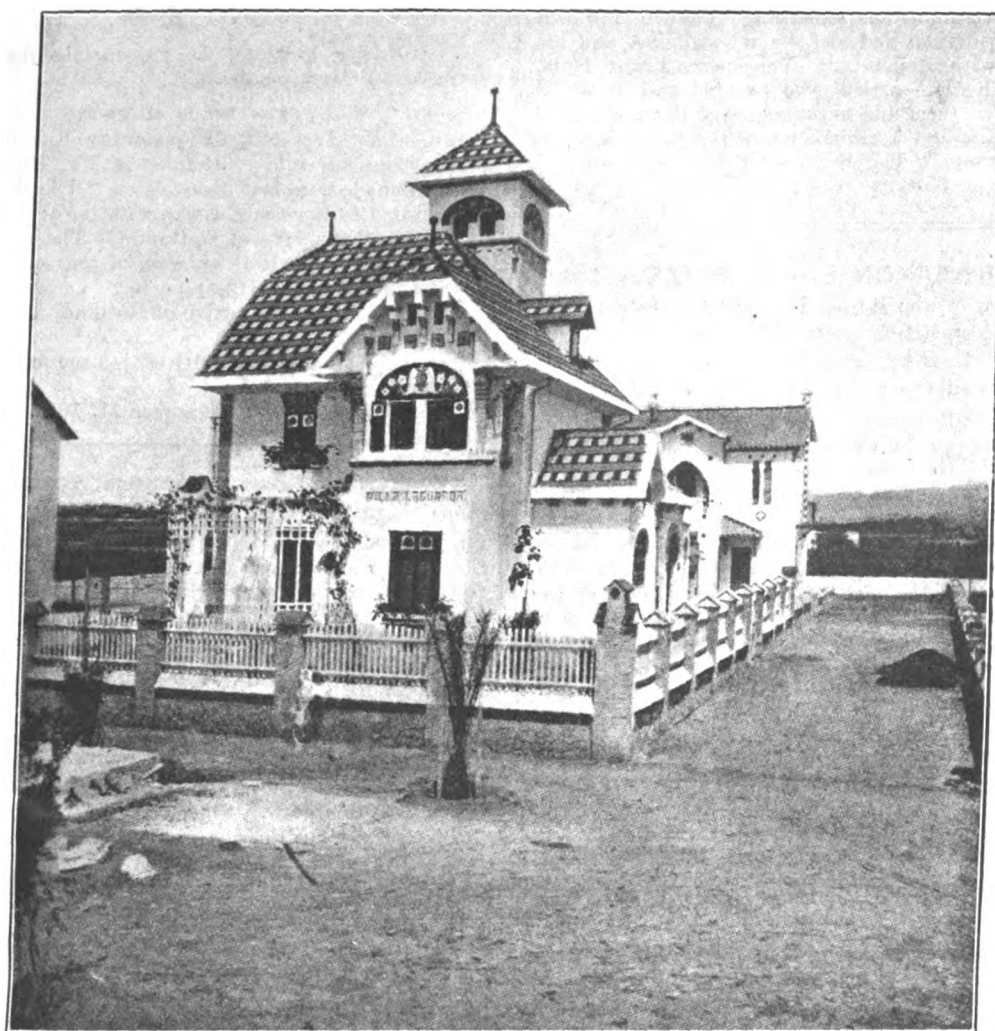
New York, as the incoming foreigner, full of prejudice, or doubt, or hope, and the returning American, crammed with guide-book and catalogue culture, see it or might see it, rises a vision, a mirage of the lower bay, the colour by day more shimmering than Venice, by night more magical than London. In the morning the mountains of buildings hide themselves, to reveal themselves in the rosy steam clouds that chase each other across their flanks; when evening fades, they are mighty cliffs glittering with golden stars in the magic and mystery of the night. As the steamer moves up the bay on the left the Great Goddess greets you, a composition in colour and form, with the city beyond, finer than any in any world that ever existed, finer than Claude ever imagined, or Turner ever dreamed. Why did not Whistler see it? Piling up higher and higher right before you is New York; and what does it remind you of? San Gimignano of the Beautiful Towers away off in Tuscany, only here are not eleven, but eleven times eleven, not low mean brick piles, but noble palaces crowned with gold, with green, with rose; and over them the waving, fluttering plume of steam, the emblem of New York. To the right, filmy and lace-like by day, are the great bridges; by night a pattern of stars that Hiroshige never knew. You land in streets that are Florence glorified. You emerge in squares more noble than Seville. Golden statues are about you, triumphal arches make splendid frames for endless vistas; and it is all new and all untouched, all to be done, and save for the work of a few of us, and we are Americans, all undone. The Unbelievable City, the city that has been built since I grew up, the city beautiful, built by men I know, built for people I know. The city that inspires me, that I love.

I went to Panama because I believed that, in the making of the greatest work of modern time, I should find the greatest inspiration.

This is the day and the time of the Wonder of Work. Within a few years, with the coming of electricity, the mystery of work, the smoke revealing, concealing mystery, will have rolled away for ever. And to-day the greatest works that man has ever undertaken are in progress. So I started on a trip of 15,000 miles in search of the most wonderful Wonder of Work.

The day I landed in Colon I found it. I had seen great cranes at Pittsburg and Duisberg, but nothing like that which stretched its great arm, with great claws, over the sad, silent swamp of Mount Hope—the debacle of De Lesseps'

MODERN EUROPEAN ARCHITECTURE.
SPAIN.



A GARDEN-SUBURB HOUSE, VILLANUEVA, BARCELONA.—Don BUENAVENTURA POLLES, Architect.

ambition. I had seen in New York, as I sat on the thirtieth storey of the Metropolitan building, a chain come up from below with a man clinging to it. But I had never imagined anything like the group of figures which rose out of Gatun Lock at dinner-time. I had looked into chasms and gulfs, but I never imagined anything so terrific as the gates of Pedro Miguel. I had seen the greatest walls of the oldest cities, but I never imagined anything so imposing as the walls of Miraflores Lock. I had seen the great aqueducts and great arches of the world, but I never imagined anything like the approaches to Gatun and the spring of Pedro Miguel, made by army officers and civil engineers mainly to save material. For there are no architects, no designers, no decorators on the Panama Canal—just engineers and organisers—Goethals, Gaillard, Gorgas, Williamson, Bishop and more. But the engineers at Panama are great designers, and great work is great decoration.

Almost before I left the Canal, artists, architects and decorators were on their way there. I hope it may interest them half as much as it interested me.

I have tried in my lithographs of the Canal to show some of the things I saw this spring, but in the few weeks I was on the Isthmus many changed and disappeared for ever. What I did is a record of what I saw. Not that I came anywhere near exhausting the subjects—in every part of the Canal compositions may be found. I merely tried to draw the things I saw when I saw them—squatting on my sketching-stool where I could, or when I could, or on an iron girder, in the cab of an engine, a telephone box, on the top of a crane. I only refused to be suspended in a bucket a hundred feet in air over one of the locks, as I was invited.

Had I not had my previous experience in trying to draw work, I could not have done even what I did, but the study of great architecture is a great aid, for the locks are architecture. The workmen I hardly touched—they are details in

the Wonder of Work they have created. Where the work is fiercest, there the fewest workers are to be seen. It is only when they knock off you see that thousands are at it.

The mountains crowned with strange trees, the long level lines of cloud—I always believed to be an invention, or a convention of the Japanese—that hang motionless before the hills, the impenetrable jungle, the native villages, were motives without end, maybe only for me.

Panama City is as picturesque as a Spanish city, and as full of character; it has yet to be lithographed, etched, drawn or painted. There are churches, courtyards, balconied streets, forts, shops, gardens, ruins—a whole ruined city—all waiting the artist who has not yet come, though he is on the way. I wonder Whistler made no record of them on that unexplained trip of his across the Isthmus. But I went to draw the Canal. I had no time for anything else, though some of the vistas under the royal palms of Ancon Hill, looking down on the town, the Pacific beyond, are as fine as the Bay of Naples. And from the sea Panama is very like Naples.

But the Canal called me.

On the Canal I found the subjects I wanted—subjects I shall never find again, and it will always be a delight to me that I went—went on my own initiative and not at anyone's bidding. If my drawings have interested my own country and countrymen, and others' countries and countrymen, it is the greatest honour I could ask, and to have done some little thing with and for the great men who have made the Canal, to have done something to record what they have done, and to have interested them, is far more than I ever expected. I shall probably never see the Canal again, but I have seen it and drawn it as well as I could, and I am glad I went, for it is the most wonderful Wonder of Work in the world.

We have recently been told that art will disappear in fifty years (by a person who says he will call his last book—

with possible appropriateness—"Vale"). But though he will disappear, and Post Impressionism will be swallowed up in shopkeeping, and though the mustard pot has gone with the soulful doggie, and the tearful baby rival of the Dresden Madonna, the artist who has something to say in his own way about his own time, and can say it, will live, and his work will live, with Rembrandt, Velasquez, Franz Hals, Meunier, and Whistler—artists who painted and drew the work and life about them and never regretted the past. And art which shows life and work will never die, for such art is everlasting, undying. "The Science of the Beautiful"—it is the Wonder of Work.

HENRY SAXON SNELL PRIZE.

THE subject given by the Royal Sanitary Institute in 1912 for the essay in competition for this prize was "The Ventilating, Lighting, Heating, and Water Supply Appliances and Fittings for an Operating Room for a General Hospital."

Ten essays were sent in, and they have been brought under the consideration of the Council.

The adjudicators for the competition were Mr. Edwin T. Hall, F.R.I.B.A., Dr. Louis C. Parkes, and Mr. A. Saxon Snell, F.R.I.B.A., and they had the advantage of the very valuable criticisms and suggestions made by Sir Frederick Treves, Bart., G.C.V.O., who acted as consulting referee.

Acting upon the advice of the adjudicators and of the consulting referee, the Council have decided to divide the prize of fifty guineas, giving one-half the sum to Mr. John Darch, M.R.San.I. (Wandsworth), writing under the motto "Aseptos," and the other half to Mr. H. F. V. Newsome (Manchester) and Mr. John G. Cherry, M.R.San.I. (Manchester), writing jointly under the motto "Magnum Bonum."

The adjudicators consider that there are many excellent suggestions in each of these essays, but, on the other hand, there are some which they consider would prove unsatisfactory in practice.

A bronze medal of the Institute will be awarded to each of the successful competitors.

The adjudicators also desire to commend the essays sent in under the mottoes:—

"Science moves but slowly, slowly creeping on from point to point."

"Ajax."

"Tout bien ou rien."

DRAWINGS AND PAINTINGS BY MR. HAL HURST, R.I., R.B.A.

At the Carlton Studio Galleries, Great Queen Street, there is just now an interesting display of work by that versatile artist, Mr. Hal Hurst. We say "versatile," for though the typical young lady reminiscent at once of Mr. Hurst and Mr. Dana Gibson is largely in evidence, yet our artist is able to produce work far removed from that same type.

In the absence of a catalogue, it will not be possible to any great extent to refer to the exhibits in detail. We noticed a series of "The Seasons," showing a nude female alone on the globe, and predominant to an exaggerated degree, but the varying and sympathetic colour-treatment in relation to the successive seasons is delightfully worked.

Two points are particularly worthy of notice in Mr. Hurst's art, and these are the extremely delicate colour, loved by him (though he can be forceful enough where he desires), and the entire refinement which he exhibits in dealing with his subjects. And, too, he is an adept in posing his figures and in giving them swing and action. His forte lies in the apotheosis of man's divinity, and this he obtains in two-fold fashion—namely, by the tête-à-tête presentation of the eternal feminine, charmingly portrayed, and the equally eternal masculine to act as a foil.

There are some vigorous portraits on show and a few genre works; one of these is in the style of Mr. Marcus Stone, R.A., and another, "The Pawnshop," suggests pathos, though not deeply pathetic in treatment.

It is a frankly commercial exhibition, but is none the less full of interest. On leaving there is a sensation that brightness and cheerfulness, all-pervading in their nature, have enveloped us whilst viewing the works, and are still enveloping us as we walk away and plunge into the murk of an autumn afternoon in the metropolis of the world.



[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Walls of Visby.

SIR,—The Architect of yesterday did me the honour of reporting my vote of thanks to Mr. Horace Porter for his excellent lecture last Monday on "The Walls of Visby." I was stated to have said I was a native of Scotland. What I said was "a native of Gotland." The sound of the two names, being so much alike, was, of course, the cause of the mistake on the part of the reporter. I must be content with being a Gotlander or a native of Gotland, a Goth or a Northman, in fact.

Sorry to trouble you with these remarks.—I am, yours very truly,

ALEX. H. HAIG.

Haslemere, Surrey: December 21, 1912.

Workmen's Houses Competition, Wellington, Salop

SIR,—Will you be good enough to publish the enclosed reply from the Clerk of the Wellington Urban District Council in answer to a letter from the Shropshire Architectural Association, in which it was pointed out that no member of the Association could compete under the terms of their competition for workmen's houses as advertised.

The terms offered are £10 premium, no assessor, and no intention to engage the successful competitor to carry out the work.

Will you kindly make some comment on the letter from the Clerk and on the conduct of the Council in attempting to promote such a competition? Perhaps you will also warn intending competitors that to send in designs under such terms is to be guilty of unprofessional conduct.—I am, yours faithfully,

FRANK H. SHAYLER, Hon. Sec.

The Shropshire Architectural Association.

16 Pride Hill, Shrewsbury: December 23, 1912.

(COPY.)

Wellington (Salop) Urban District Council.

Clerk's Office, Bank Chambers, Wellington,
Salop: December 21, 1912.

To F. H. Shayler, Esq., F.R.I.B.A. (Hon. Sec., Shropshire Architectural Association), Shrewsbury.

WORKMEN'S HOUSES COMPETITION.

Dear Sir,—I am in receipt of your letter of the 18th inst. this morning, which I have shown to the Chairman of the Council, as requested. Now that the competition has been advertised and a number of architects all over the country have applied for copies of the particulars, and are, presumably, at work on the plans, I cannot see how any change can be made at this late hour, even should the Council be willing to do so. You must surely allow those who arrange the competition to draw up their own conditions, and you should not have any reasonable cause for complaint because those conditions do not fall in with the views of certain would-be competitors who desire to have the conditions altered to suit their personal views.

I would remind you that the competition is not arranged for the benefit of competitors, but for the benefit of the Council. Whether the architects in the county (members of your Association) compete or not is entirely a matter for themselves to decide. There is nothing in the conditions to lead anyone to suppose that the Council will not be advised by a competent assessor or adviser (if the Council thinks proper), but the ultimate result must be by resolution of the Council; you may, however, take it definitely that the Council has decided that it will not bind itself to employ the successful competitor to carry out the plans, or even to carry out the plans at all.—Yours faithfully,

(Signed) J. W. LITTLEWOOD, Clerk.

THE Newcastle Education Committee are informed by the Buildings and Equipment Sub-Committee that the plans for the new Cruddas Park and Rye Hill Schools have been selected. They are to be sent to the Board of Education for approval.

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* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

CANADA.—Oct. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARDIFF.—Aug. 6.—The Corporation invite designs and estimates in competition for a fire brigade station proposed to be erected in Westgate Street, Cardiff. The Corporation have appointed Mr. A. Marshall Mackenzie, architect, to act as assessor. The deposit of £2 2s. will be returned to all architects submitting bona-fide designs or who return the conditions within six weeks. Full particulars of the competition will be sent to the architects on application to Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

CONTRACTS OPEN.

ASHTON-UNDER-LYNE.—July 12.—For erection of a laundry, chimney, &c., at the district infirmary. Messrs. W. H. George & Sons, architects, 7 Warrington Street, Ashton-under-Lyne.

BARROW-IN-FURNESS.—July 15.—For the extension of the electricity works buildings, Buccleuch Street, for the Corporation. The Borough Engineer and Surveyor, Town Hall.

BECKENHAM.—July 22.—For the erection of caretaker's lodge, public conveniences, &c., in Kelsey Park. Mr. J. A. Angell, surveyor, Beckenham. Send £2 deposit to the Collector.

BEDFORD.—July 25.—For works of repair at the several Council schools, for the County Education Committee. The County Surveyor, Shire Hall, Bedford.

BERWICK ST. LEONARD.—July 18.—For the erection of a cottage and certain repairs to buildings at Berwick St. Leonard Glebe Farm, for the Small Holdings and Allotments Committee of the Wilts. County Council. Deposit £1 1s. Mr. A. Boa, county land agent, County Land Agent's Office, Trowbridge.

BIERLEY.—July 9.—For masons' and joiners' work required in the erection of verandahs at the City Hospital, Bierley Hall, for the Corporation. The City Architect, Town Hall, Bradford.

BIRTLEY.—For work in connection with boundary walls, fencing, gates, &c., at the recreation ground. Mr. P. L. Browne, architect, Pearl Buildings, Northumberland Street, Newcastle-on-Tyne.

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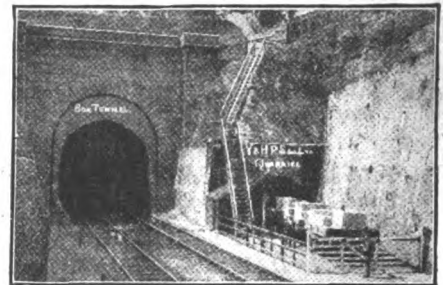
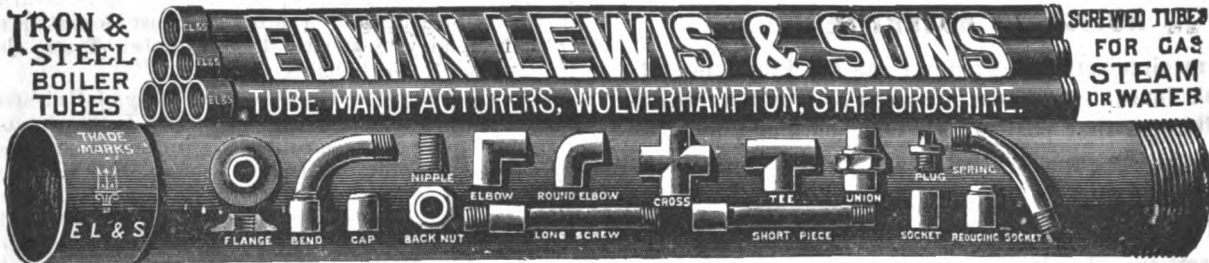
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BLYTH.—For the erection of elementary schools. Send applications and £2 2s. deposit by July 10 to Messrs. Fenwick & Watson, architects, Pearl Buildings, Northumberland Street, Newcastle-on-Tyne.

BOLTON.—July 23.—For erection of the King Edward VII. Memorial Nurses' Home at the Bolton Infirmary. Send applications and £2 2s. deposit to Messrs. Henderson & Brown, architects, 2 Fold Street, Bolton.

BOLDON COLLIERY.—July 12.—For erection of a new lock-up. Mr. W. Crozier, A.M.I.C.E., county surveyor, Shire Hall, Durham.

BRADFORD.—For the various works required in the erection of a detached residence, Leylands Lane, Heaton, for Mr. J. Herbert Haley. Mr. H. W. Rogerson, M.S.A., architect and surveyor, 13 Cheapside, Bradford.

BRIDLINGTON.—July 13.—For (1) bricklayer's work, (2) joiner's work, and (3) plumbing work in connection with the erection of twenty-five workmen's dwellings in Watson's Balk, Marton Road, for the Sanitary Committee. Mr. E. R. Matthews, borough surveyor, Town Hall, Bridlington.

BURY.—July 17.—For alterations to the Grain Warehouse at Knowsley Street Goods Yard, for the Lancashire and Yorkshire Railway. The Engineer's Office, Hunt's Bank, Manchester.

CHESTER.—July 10.—For erection of a mill, &c., Brook Street, for the Smithfield Provender Co., Ltd. Deposit £1 1s. Messrs. J. H. Davies & Sons, architects, 14 Newgate Street, Chester.

CHOPWELL.—July 13.—For erection of sixteen to twenty houses at Chopwell, for the Blaydon Urban District Council. Deposit £2 2s. The Surveyor, Council Offices, Blaydon.

DEWSBURY.—July 15.—For the whole of the works required in the erection of a fire-engine station. The Borough Surveyor, Town Hall, Dewsbury.

DURHAM.—July 9.—For carrying out improvements at Durham Station, for the North-Eastern Railway Co. Mr. W. Bell, the company's architect, Westgate Road, Newcastle-on-Tyne, and the Stationmaster at Durham.

EAST BARNET.—July 15.—For alterations and additions at the Brunswick Park County Council School. Deposit £2 2s. The County Surveyor's Office, Hatfield.

EDINBURGH.—July 11.—For taking down the existing boundary wall of the Academy cricket ground, and erecting new wall to adjusted line; supplying and fitting up wire netting screen with steel supports. Mr. A. Horsburgh Campbell, M.Inst.C.E., burgh engineer, Parliament Square, Edinburgh.

EXETER.—For the demolition and rebuilding of 139 and 140 Sidwell Street, for the Feoffees of the Parish Lands of St. Sidwell. Mr. J. Archibald Lucas, architect and surveyor, Guildhall Chambers, 49 High Street, Exeter, forthwith.

GLASGOW.—July 10.—For the following works required in connection with proposed internal alterations of property at 202, 206 and 212 Duke Street, and 135 Moore Street—viz.: (1) Mason, joiner, and plaster works; and (2) plumber work, for the Corporation. Deposit £1 1s. The Office of Public Works, 64 Cochrane Street, Glasgow.

HALIFAX.—For the several works required in connection with the extensions to central stores, Northgate, for the Halifax Industrial Society, Ltd. Messrs. Clement Williams & Sons, architects, Post Office Buildings, Commercial Street, Halifax.

HORSLEY WOODHOUSE.—July 15.—For erection of Council School, to accommodate 204 girls and infants, for the Derbyshire Education Committee. Deposit £1 1s. Mr. G. H. Widdows, A.R.I.B.A., architect to the committee, County Education Office, St. Mary's Gate, Derby.

IRELAND.—July 12.—For the erection and completion of a Directors' boardroom, Secretary's office, lavatory, &c., at the Carlow Gas Company's premises, Montgomery Street, Carlow. Mr. R. J. Nicholson, secretary, Boardroom, Carlow.

IRELAND.—July 13.—For the erection of twenty-one working-class houses, for the Asty Urban District Council. The Council Offices, Town Hall, Asty, or Mr. James F. Reade, A.M.I.C.E., 28 Barrowstrand Street, Waterford.

IRELAND.—July 15.—For erection of a school at Garvetagh in accordance with plans issued by the Commissioners of Public Works (Ireland), for the committee of First Castlederg Presbyterian Church. Mr. J. Crockett, Castlederg.

IRELAND.—July 15.—For the construction of roads, sewers, buildings, electric lighting, and other works in connection with the erection of forty-three dwellings for the working classes, on site known as Beatty's Field, Ballsbridge,

twelve type "A" Cottage, thirty-one type "B" Cottage. The Council Offices, Town Hall, Ballsbridge, Pembroke, co. Dublin.

LICHFIELD.—July 10.—For erection of Whittington Barracks sub-post office, Lichfield, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Lichfield Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

LINTHWAITE.—July 9.—For the various works (except mason's) required in the erection of nine dwelling-houses, Manchester Road. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

LONDON.—July 8.—For erecting a factory for the O.T. Co., Ltd., at Green Street, Blackfriars, S.E. Messrs. H. Langston & Co., architects and surveyors, 1, 2, and 3 The Exchange, Southwark Street, S.E.

LONDON.—July 9.—For taking up the old flooring and relaying with new to two wards at their infirmary, Cale Street, Chelsea, S.W., for the Board of Guardians. Deposit £2 2s. Mr. E. J. Harrison, architect, 9 Gray's Inn Square, Holborn, W.C.

LONDON.—July 9.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Victoria New Telephone Exchange. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W.

LONDON.—July 10.—The Lighting Committee of the Islington Borough Council invite tenders for the construction of three underground transforming chambers. The Electrical Engineer, 50 Eden Grove, Holloway.

LONDON.—July 10.—For jobbing work at twelve cottages situate at Highfield Road, Winchmore Hill, for the Southgate Urban District Council. Mr. C. G. Lawson, C.E., surveyor, Council Offices, Palmer's Green, N.

LONDON.—July 10.—For alterations at the branch library, Ladbroke Grove, North Kensington, W., in connection with the formation of a children's room, &c., therein. Deposit £2. Mr. W. Chambers Leete, town clerk, Town Hall, Kensington, W.

LONDON.—July 15.—For the construction of an underground convenience at Tally Ho Corner, in the Great North Road, Finchley. Deposit £2 2s. Mr. C. J. Jenkin, M.I.C.E., M.I.M.E., Council Offices, Finchley, N.

LONDON.—July 16.—The Commissioners of H.M. Works and Public Buildings invite tenders for the extension of the New Public Offices, Westminster (superstructure). Deposit £1 1s. Sir Henry Tanner, F.R.I.B.A., &c., H.M. Office of Works, Storey's Gate, S.W.

LONDON.—July 17.—For demolishing boiler house, chimney shaft, and other buildings at the North-Eastern Fever Hospital, St. Ann's Road, Tottenham, N., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, E.C.

MANSFIELD.—July 12.—For erection and completion of slipper baths at Pleasley Hill. Deposit £2 2s. Mr. T. P. Collinge, A.M.I.C.E., borough surveyor, Exchange Row, Mansfield.

MILNSBRIDGE.—July 10.—For the various works required in the erection of two dwelling-houses, Armitage Road. Messrs. Abbey & Hanson, 11 Cloth Hall Street, Huddersfield.

NEWPORT (MON.).—July 10.—For alterations and additions to the offices, Pentonville, for the County Council. Deposit £1 1s. Mr. W. Tanner, F.S.I., county surveyor, Newport, Mon.

PONTEFRAC.—July 8.—For the various works required in the alterations and additions to the Elephant Hotel. Send in names by July 8 to Mr. W. J. Tennant, architect and surveyor, Pontefract.

PRUSSIA COVE.—July 13.—For certain alterations and additions at the coastguard station, Prussia Cove, Cornwall. Mr. O. R. Caldwell, architect, Penzance.

ST. AUSTELL.—July 15.—For the erection of a residence, Truro Road, for Mr. G. H. Grenfell. Mr. B. C. Andrew, M.S.A., architect, St. Austell.

SANDHURST.—July 24.—The Secretary of State for War invites tenders for the erection of a hospital of twenty beds, nursing quarters, and quartermaster-sergeant's quarters, drainage, &c., complete, at the Royal Military College, Sandhurst, Berks. Send applications and 10s. deposit by July 12 to the Director of Barrack Construction, 80 Pall Mall, London, S.W.

SCOTLAND.—For the following trades in connection with the reconstruction and extension of the Dunfermline Opera House: Mason, brick and concrete work, steel work, carpenter and joiner work, plumber work, slater work, plaster

work, fibrous plaster work, mosaic and tile work, glazier work, heating work, electric lighting work, furnishings work, fireproof curtain work, painter and decorating work, asphalt work. Mr. J. D. Swanston, architect, Kirkcaldy.

SCOTLAND.—For the mason, carpenter, plumber, and painter works of proposed new club building at Foyers, for the British Aluminium Co. Messrs. Cameron & Burnett, architects and ordained surveyors, Academy Buildings, Inverness.

SCOTLAND.—July 11.—For the brick, joiner, slater, plumber, plaster, glazier, painter, and smith work of new school at High Bonnybridge, for the Falkirk Landward School Board. Messrs. P. & C. Hamilton, architects, Falkirk.

SCOTLAND.—July 11.—For excavator, mason and brickwork, carpenter and joiner, plumber, plaster, slater, glazier, and asphalt works of proposed additions and alterations to the west infant school, for the School Board of Kirkcaldy and Dysart. Mr. W. Williamson, F.R.I.B.A., architect, Kirkcaldy.

SCOTLAND.—July 18.—The Commissioners of H.M. Works and Public Buildings are prepared to receive tenders for the erection of a new Post Office at Wick. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. The Postmaster at Wick Post Office, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

SEDEFFIELD.—July 17.—For the restoration of and additions to the Parish Church (whole tenders only). Mr. W. H. Wood, F.R.I.B.A. (successor to the late C. Hodgson Fowler), architect, 20 Collingwood Street, Newcastle-on-Tyne, and 47 North Bailey, Durham.

STAFFORD.—July 11.—For erection of Stafford new head post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Stafford Head Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

STAINLAND.—July 16.—For alterations and repairs (plumber, plasterer, and asphalter) at the West Vale Council school; also Bowling Green and Sowood Council schools. Stainland, alterations and repairs (builder, joiner, and asphalter), for the Greetland and Stainland Education Subcommittee. Mr. F. Parker, Education Offices, Elland.

SUNDERLAND.—July 11.—For the execution of additions and alterations to (a) the mortuary, and (b) the stores at the workhouse, for the Guardians. Messrs. W. & T. B. Milburn, architects, 19 Fawcett Street, Sunderland.

SWANAGE.—July 12.—For grading playgrounds, building boundary wall, &c., at Swanage Council School, Dorset. The County Offices, Dorchester; Messrs. Fletcher & Brett, Wimborne; and Swanage Council School.

THORNE.—July 10.—For erection of additions to the male wards of the workhouse infirmary. Mr. G. H. Newborn, clerk to the Guardians, Union Offices, Thorne.

TUNBRIDGE WELLS.—July 15.—For the execution of proposed extension and also for certain painting and repairs at the technical institute, for the Kent Education Committee. Dr. J. Lister, Technical Institute, Tunbridge Wells, or at the offices of the Committee, Caxton House, Westminster.

WALES.—July 10.—For erection of additions and alterations to New Star Hotel, Cwmgorse, Glam. Mr. D. Morgan, architect, Brynheulog, Gwauncaeurgwen.

WALES.—July 11.—For erection of thirty-five houses on the new Cwmaman Road, Godreaman, Aberdare, for the Globe Building Club. Mr. R. H. Willson, architect, 14 Lewis Street, Aberaman.

WALES.—July 18.—For the erection of an Infirmary at Bangor, North Wales, for the Guardians of the Bangor and Beaumaris Union. (Mr. Frank Bellis, architect, Bangor.) Send applications and £5 5s. deposit (excepting such contractors who have already made this deposit) to Mr. R. Benjamin Evans, clerk to the Guardians, Union Offices, Bangor.

WALSALL.—July 13.—For alterations and additions to Croft Street infants' school. The Borough Surveyor, Council House, Lichfield Street, Walsall.

WHITLEY BAY.—July 15.—For the erection of a brick boundary wall, gate piers and gates, &c., fronting the Council's yard at Hill Heads. Mr. A. J. Rousell, A.M.Inst.C.E., the Council's surveyor, Council Offices, Whitley Bay.

WHITEHAVEN.—July 10.—For supplying and fixing two Cornish boilers, calorifiers, pumps, and radiators, with the pipes for heating and domestic hot-water service; new baths, lavatories, and sinks, including the necessary plumbing; and the supplying and fixing of a disinfectant, and other works connected therewith, at the workhouse, Low Road. Deposit £3 3s. Messrs. Beswick & Davis, civil engineers and architects, 18 Church Street, Whitehaven.

WOOD GREEN.—July 16.—For building an additional room at Noel Park schools, during the summer holidays. Send £1 1s. deposit to Mr. W. P. Harding, clerk of the Local Education Authority, Town Hall, Wood Green.

WOOD GREEN.—July 16.—For repairs and decorations to schools to be executed during the summer holidays. Send £1 1s. deposit to Mr. W. P. Harding, clerk of the Local Education Authority, Town Hall, Wood Green.

WOOLWICH.—July 15.—For the various works required in erection of a waiting-room and sanitary convenience at the tramway terminus, Abbey Wood, for the Woolwich Borough Council. Deposit £1 1s. Mr. J. Rush Dixon, M.I.C.E., borough engineer, Town Hall, Woolwich.

TENDERS.

EVESHAM.

For erection of bath-rooms and alterations to existing bath-rooms, at the workhouse.

Averill & Son	£258 10 0
Espley & Co., Ltd.	255 0 0
W. White	240 0 0
J. E. White	236 0 0
Cooper	226 13 7
C. J. Knott (recommended)	189 5 0
Williams	187 15 0

LONDON.

For minor improvements at the Silwood Street school, Rotherhithe, for the London County Council.

Garrett & Son	£2,568 0 0
Thomas & Edge	2,485 0 0
Groves	2,470 0 0
Holloway	2,390 0 0
Lole & Co.	2,388 8 1
G. PARKER & SONS, Peckham (recommended)	2,105 0 0
Architect's estimate	2,225 0 0

For the heating work in connection with the remodelling of the Redvers Street school, Hoxton.

Harlow & Son	£677 0 0
Davis	656 0 0
Cannon & Hefford	597 0 0
Tilley Bros.	569 4 6
The Brightside Foundry and Engineering Co.	549 0 0
Yetton & Co.	539 0 0
Palowkar & Sons	534 0 0
Cash & Co.	534 0 0
G. & E. BRADLEY, 77 Lever Street (accepted)	527 0 0
Cannon & Sons	502 0 0
Architect's estimate	575 0 0

For minor improvements at the Wolverley Street school, Bethnal Green, for the London County Council.

Leng	£1,905 0 0
Holloway	1,875 0 0
Rowley Bros.	1,852 0 0
Brand, Pettit & Co.	1,778 0 0
Shurmur & Sons	1,732 0 0
Symes	1,727 0 0
Grover & Son	1,717 0 0
McCORMICK & SONS, Essex Road (recommended)	1,635 0 0
Architect's estimate	1,566 0 0

For enlargement of the County secondary school, Peckham, for the London County Council.

Triggs & Co.	£5,380 1 1
Garrett & Son	5,301 19 5
Parker & Sons	5,284 0 0
King & Son	5,068 0 0
W. F. Blay, Ltd.	4,994 0 0
Kent	4,974 0 0
Dickens	4,836 0 0
W. SMITH & SON, Harleyford Road (recommended)	4,725 0 0
Architect's estimate	4,740 0 0

OVENDEN.

For the erection of several works required in extensions to engineering works at Ovenden, Yorks. Messrs. R. Horsfall & Son, architects, Halifax.

Accepted tenders.

Crossley & Radcliffe, Halifax, mason	£790 0 0
Lambourne & Co., Manchester, steel	440 0 0
Eccles, Halifax, joiner	248 0 0
Heywood & Co., Huddersfield, glazing	239 16 3
Bould & Son, Huddersfield, plumber	169 0 0
Rushworth & Firth, Halifax, slater	140 0 0

RYTON-ON-TYNE.

For erection of Wesleyan church, hall, and classrooms, Crookhill, Ryton. Mr. G. BELL, architect, Newcastle-on-Tyne.

Browell	£1,168	10	0
Davidson	1,161	12	3
Davidson & Miller	1,158	0	0
Walker	1,154	1	0
Ayton	1,117	0	0
Fairnington	1,108	18	9
Bewley	1,097	0	0
T. CHARLTON, Newburn (recommended)	1,027	8	7

SCOTLAND.

For sewage disposal works, for the Stewarton Town Council, Ayrshire. Messrs. ELLIOT & BROWN, A.M.M.I.C.E., engineers, Nottingham.

Brebner & Co.	£5,877	0	0
Boyd & Forest	5,801	8	10
Gibson	5,700	10	5
Urquhart	5,569	19	5
Shanks & McEwan	4,895	16	4
Murray & Co.	4,838	15	1
Chambers & Sons	4,736	1	8
Crawford Bros.	4,714	2	0
I. CRAIK, Glasgow (accepted)	4,702	17	1

SHOTTON.

For erection of hotel at Shotton, near Chester, for Mr. R. Darbyshire, Hawarden. Mr. SAM EVANS, F.S.I., architect, Rhyl.

Roberts & Lloss	£5,470	0	0
Parker Bros.	5,135	0	0
Blane & Son	5,015	0	0
Cash & Co.	4,950	0	0
Williams	4,942	0	0
Carpenter	4,939	0	0
Moyers & Sons	4,800	0	0
Jones & Hough	4,600	0	0
WRIGHT & SONS, Hawarden (accepted)	4,593	17	0

SOUTHALL.

For the construction of an open-air swimming bath at the recreation ground, Southall Green, for the Southall-Norwood Urban District Council. Mr. R. BROWN, A.M.I.C.E., F.S.I., engineer, Southall, Middlesex.

Thompson	£2,483	6	2
Battley, Sons & Holness	1,851	0	0
Jarman & Co.	1,758	0	0
Ford	1,625	17	8
Morecroft	1,601	0	0
A. & B. HANSON, Southall (accepted provisionally)	1,551	0	0
Elliott & Co.	1,548	5	5
Catley	1,537	12	0

SPALDING.

For the erection of six cottages at Donington, for the Spalding Rural District Council. Mr. W. H. H. DAVIS, architect and surveyor, Spalding.

G. BAENSDALE, Donington (accepted) . . . £988 10 0

For the erection of four cottages at Moulton, for the Council. Mr. W. H. H. DAVIS, architect, Spalding.

J. W. DERBY, Boston (accepted) . . . £736 0 0

UPPER BEEDING.

For additions and alterations to the Council School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. ROBERTS, F.R.I.B.A., county education architect, Worthing.

Gillam	£2,500	0	0
Gates & Son	2,244	9	0
Curd	2,209	0	0
Potter	2,149	0	0
Chowne & Graham McVey	2,140	2	3

UPPER PENN.

For erection of a Council School to accommodate 308 children, together with a cookery centre.

W. ROE, Wolverhampton (accepted) . . . £4,787 0 0

For the installation of heating apparatus in the above.

TRUSWELL & SON, Newcastle (accepted) . . . £166 0 0

WALES.

For erection of Council School, Holywell, for the Flintshire Education Committee. Mr. S. EVANS, F.S.I., county surveyor and architect, Mold.

Dryland & Preston, Ltd.	£4,752	0	0
Mayers, Son & Co.	4,740	12	0
Williams	4,500	0	0
Lye	4,498	0	0
Rogers & Sons	4,399	0	0
Lloyd	4,385	0	0
Jones & Son	4,243	0	0
SIBEON BROS., Holywell (accepted)	4,222	0	0

For erection of a chapel school at Cwmcam. Mr. R. L. ROBERTS, M.S.A., architect, Abercarn.

Whymore & Walton	£1,746	0	0
King & Co.	1,655	0	0
Kirby & Westacott	1,620	0	0
Edmunds & Woods	1,615	0	0
Davies & Sons	1,524	0	0
Williams	1,499	0	0
Pritchard	1,495	0	0
Herbert & Co.	1,415	0	0
Jones	1,345	0	0
WATKINS & Co., Crosskeys (accepted)	1,295	16	9

For erection of Council School at Tregaron, for the Cardigan Education Committee. Mr. G. DICKENS-LEWIS, county architect, Aberystwyth.

Jenkins	£2,198	0	0
Evans & Jones	2,145	0	0
W. Davies	1,907	0	0
Owen	1,897	0	0
L. Davies	1,642	0	0
W. JONES, Lampeter (accepted)	1,536	0	0
Thomas & Jones	1,487	0	0

MR. B. T. BATSFORD will publish in a few days a new and re-illustrated edition of Mr. Francis Bond's "Cathedrals of England and Wales."

MR. JAMES N. STIRLING, M.A., B.Sc., chief assistant surveyor, Clydebank, has been appointed burgh surveyor and water engineer of Helensburgh, at a salary of £200 per annum.

THE Duns Gas Company has decided to carry out extensive alterations on the gasworks, entailing a cost of about £2,000.

A ROMAN Catholic school is to be erected in Toulon Street, Camberwell. The total cost of the work, the plans for which have been passed by the Education Department, is estimated at £10,000.

THE Foleshill District Council have instructed their engineer to prepare plans, &c., and invite tenders for the construction of a brick storage reservoir with a capacity of 300,000 gallons.

THE Coventry Corporation's Sewage Farm Committee have in contemplation a scheme for the extension of the system of bacteria filtration, at an estimated cost not exceeding £40,000.

THE Hull Education Committee have approved of plans prepared by the City Architect for a girls' secondary school, estimated to cost £25,000 exclusive of roads and fencing, or the terracing, which is estimated at £900. This school will afford accommodation for children in schools which are to be closed.

SAMUEL DEACON & Co., the advertisement agents and contractors, established at Snow Hill over a century ago, and who have occupied No. 154 Leadenhall Street for the last fifty-seven years, have removed to No. 7 Leadenhall Street, nearly opposite. We understand their premises have been acquired by a large insurance company for reconstruction.

THE Hull Corporation Tramways Committee last week accepted the tender of Messrs. Bolling & Lowe at £7,969 9s. 3d. for steel rails, manufactured by the Phoenix Company in Hamburg. The Deputy-Chairman stated, in reply to a question, that five or six British firms had been asked to tender, and only one had done so, the majority of the others saying they were full up.

AN extensive scheme of extensions is projected for Port Talbot, South Wales. The Port Talbot Railway and Dock Co. intend to embark on extensions costing over £100,000. Of this total £80,000 is for the extension of the breakwater at the entrance channel. Another contract for £414,000 is already let. This work consists of dredging as a preparatory task to the construction of a ferro-concrete wharf at the end nearest the Port Talbot Steel Works.

DANGEROUS PROPERTIES IN GLASGOW.

MR. JOHN LINDSAY, Town Clerk of Glasgow, has issued a notice to property owners and house factors in the city in which he says that the Corporation have had under consideration the frequent and serious injuries which have been sustained by members of the public through the falling of chimney cans, rhones, slates, &c., and have instructed him to direct attention to the requirements of Section 82 of the Glasgow Building Regulations Act, 1900, and to the fact that it is the duty of the owner of every building to have it and its external adjuncts regularly inspected by competent persons, and to immediately remedy all defects which may be discovered by such inspection. Mr. Lindsay further directs attention to the fact that, apart from the question of civil liability for any accident that may occur, should any building, projection, chimney head, chimney can, rhone, &c., be in a dangerous condition, the owner is liable in a penalty of £5 unless he can prove that he has, within the previous twelve months, caused the inspection required by the statute. The section referred to is as follows:—

The owner of every building shall cause to be regularly inspected by competent persons such building and all projections, chimney stalks, flues, chimney heads, chimney cans, rhones, slates, snow boards, sign boards, lamps or other things connected with or appertaining to such building, and shall forthwith remedy all defects which may be discovered by such inspection. In the event of it being proved to the satisfaction of the Dean of Guild that any such building, projection, chimney stalk, flue, chimney head, chimney can, rhone, slate, snow board, sign board, lamp or other thing connected with or appertaining to such building is in a dangerous condition, such owner shall be guilty of a guild offence, and shall be liable in a penalty not exceeding five pounds, unless he shall prove that he has within the previous twelve months caused the inspection required by this section.

LIGHTING THE HOME.

THE question of efficient lighting has hitherto received little attention at the hands of those responsible for the interior equipment of our homes. And the householder who is apt to wax disputatious over his quarterly bill for electricity or gas rarely considers other and, one would have thought, more obvious methods of economy.

Unfortunately, the mind of the householder who installs, for instance, electric light, and purchases lamps of unexampled efficiency, is, so far as any knowledge of the effective use of the light is concerned, a complete blank.

His fault is that he thinks only in what engineers call "terms of candle-power," and forgets that his primary concern should be, not so much the candle-power of the lamp, but the useful illumination which he obtains from it. It has not occurred to him that light, like a stream of water, can be controlled and directed; and that a 16-candle-power lamp, used and equipped in a proper manner, might give just as much light where he wanted it as a 50-candle-power lamp wrongly suspended and fitted with a light-absorbing shade.

The chief defects of present methods of house lighting have been briefly summarised thus by an illuminating engineer:—

(1) Pendant lamps are generally hung too low, so that they are in the line of vision. Brilliant light sources suspended in such a position are physiologically harmful. Moreover, they defeat their own object, because the "glare" of the lamps causes the pupil of the eye to contract and permits only a small part of the light to enter.

(2) Wall brackets are frequently used for drawing-room lighting, with the result that a large proportion of the light is absorbed by the coloured wall-paper.

(3) And in both wall-bracket and pendant systems of lighting the lamps are, more often than not, equipped with shades which do not redirect or distribute the light, but only absorb it.

The proper place for the lamp, in a room where a good, general illumination is required, is close up to the ceiling, or, if possible, right on it. As an electric lamp emits most of its light horizontally, it is necessary to employ some form of reflector which will redirect the light on to, and distribute it over, the "working-plane"—i.e. the desk or table level. In this way "glare" and uneven lighting are avoided.

Glass reflectors, with vertical prisms moulded on the exterior surface, afford the most artistic and effectual means of accomplishing this. And if the correct type of reflector be chosen, the light can be redirected from a lamp fixed on

the ceiling in such a manner as actually to give an increase of useful illumination on the "working plane" over that given by an improperly equipped lamp hanging in unhygienic proximity to the eyes.

A still more thorough method of obviating "glare" is to hide the lamps altogether. This may be done by fitting the lamps into a metal or plaster bowl containing powerful up-turned reflectors. The whole fitting is suspended by chains from the ceiling; and all that is visible from the floor is the ornamental exterior of the bowl. The reflectors throw the light on to the ceiling, whence it is reflected downwards over the whole room. Owing to the large area of the reflecting surface (the ceiling) the distribution and diffusion of the light are entirely uniform, and the total effect is extremely restful and comforting.

This method of illumination is known as "Indirect Lighting," and an excellent example is the British Thomson-Houston Company's "Eye-Rest" system. Indirect lighting is efficient, artistic and hygienic, and in the near future will probably be the usual method employed for the general illumination of our homes, although, of course, it will not supersede the small table or desk lamp for strictly local purposes.

However, it is not wise to be dogmatic on any matter which concerns the Englishman's home, for it is a place in the conduct of which he is apt to resent interference or advice, and sometimes even the expression of an opinion contrary to his own. In his office or works he may pursue efficiency with an enthusiasm at once admirable and upsetting, but in his home he reserves to himself the right to be as wasteful and extravagant as he pleases.

In a sense he is right to preserve this distinction, and these criticisms and hints are accordingly put forward with extreme diffidence, in the manner of a convicted trespasser in a strictly private place.

A NEW AND IMPROVED METAL LATHING FOR PLASTER WORK.

THE interesting announcement is made that the Expanded Metal Co., Ltd., of York Mansion, York Street, Westminster, S.W., and Stranton Works, West Hartlepool, has succeeded in producing an improved diamond mesh lathing, which will be obtainable at prices lower than those for the original varieties.

The new lathing is made under a recently patented process, and will be known by the trade name of "BB Expanded Metal" lathing. It is made in standard size sheets 9 feet longway of mesh by 2 feet shortway of mesh, which is an increase of 1 foot in length as compared with the original lathings. It has several important advantages over its predecessors. First and foremost its cost is less, then it may be used at wider spacings, and it requires less plaster.

Several practical tests have been made under ordinary working conditions by well-known plasterers, who have used many thousands of yards of the original lathings, and their reports all agree that not only is the new lathing stronger and stiffer, but that on account of the reduced size of the diamond mesh, together with the improved slope of its strands, less plaster goes through to form the "key," and practically none falls off and is wasted.

"BB Expanded Metal" lathing is now ready for the market, and (as it is sold through the merchant trade only) stocks will be held in most large centres.

It is listed in three gauges, thus: BB 26-gauge expanded metal lathing, BB 24-gauge expanded metal lathing, and BB 22-gauge expanded metal lathing.

Reference to the price list issued by the Expanded Metal Co., Ltd., shows that, gauge for gauge, a saving of from 25 per cent. to 60 per cent. is made by substituting the new lathings for the old. But the saving in cost is really more than the difference between the price list rates for equivalent gauges because of the wider spacings that may now be used. To take one gauge only, in the original lathing, No. 1, 24-gauge, is not recommended for spacings over 12 inches, whereas "B" 24-gauge may be used for spacings up to 15 inches in ordinary horizontal or sloping work, and up to 18 inches in ordinary vertical work.

Tests have been made at these spacings with entirely satisfactory results, both with ordinary lime and hair mortar and with special quick-setting plaster, and these facts should produce a ready and large sale for the new lathing.

THE Secretary of the Incorporated Church Building Society, 7 Dean's Yard, Westminster, has received a bank-note for £1,000 from an anonymous contributor.

BUILDING PROGRESS IN THE PROVINCES
AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BERKSHIRE.

Ramsbury.—Twelve cottages, for the R.D.C.*Reading*.—Council School, Wokingham Road: manual instruction block (£750).*Windsor*.—King Edward VII. Hospital: women's ward (£3,000); also children's ward.

CORNWALL.

Redruth.—Business premises, Higher Fore Street: extension for Mrs. Gribble.

Four houses, North Country, for Mr. W. Penna.

Two houses, Wheal Harmony, for Mr. J. Luke.

St. Austell.—Workhouse Infirmary: alterations (£2,000).

DERBYSHIRE.

Glossop.—Council Elementary Day Schools (£7,700); also Infant School at Whitfield.*Kilburn*.—Colliery School (£600).*Long Eaton*.—Council School.

DEVON.

Exeter.—Nos. 139 and 140 Sidwell Street: rebuilding. Mr. J. A. Lucas, F.S.I., A.R.I.B.A., architect.*Plymouth*.—Masonic Hall, Tavistock Road.*Torquay*.—Cookery, laundry, and handicraft centre, Homelands.

DURHAM.

Coxhoe.—Hall for the Social and Literary Institute (£1,000).*Lanchester*.—Smallpox hospital.

ESSEX.

Chelmsford.—Five cottages, off Springfield Road, for Mr. N. G. Bradridge.

Six cottages, Marconi Road, for Mr. G. A. Golding.

Fifteen cottages, Marconi Road, for Messrs. Johnson & Hawkes.

Fifty cottages, Rainsford Lane.

Extension of main building and new chip-house, for Hoffmann Manufacturing Co.

Cold Norton.—Council School.*Hornchurch*.—Boys' Council School, off Globe Road.*Ingrave*.—C. of E. School for 150 places.*Ockenden, South*.—Council School: alterations and enlargements (£4,200).

Village school alterations and repairs (£2,500).

Purfleet, Stifford, and West Thurrock.—Cookery and handicraft centres (£1,100).*Romford*.—Children's Isolation Block at the Infirmary for six boys and six girls.*Southend-on-Sea*.—All Saints' Church Hall (£2,000). Sir Charles Nicholson, Bart., F.R.I.B.A., architect.*South Ockenden*.—(See Ockenden.)*Stifford and West Thurrock*.—(See under Purfleet.)

HAMPSHIRE.

Basingstoke.—Six houses, Penrith Road, for Messrs. Bowerman & Fox.

Two houses, Winchester Road, for Messrs. Hedderley & Purdue.

Portsmouth.—Public Elementary School, Wimborne Road, Southsea.*Southbourne*.—All Saints' (Permanent) Church.

KENT.

Ashford.—Boys' Council School: enlargement for eighty additional places.

S.E. and C. Railway Girls' School for 300 places.

Technical Institute, Elwick Road.

Borough Green.—Council School enlargement by 150 places.*Chatham*.—Council School, Ordnance Street.*Eynsford*.—Baptist Sunday Schools.*Gillingham*.—St. Augustine's Church (£5,000).

LANCASHIRE.

Bolton.—St. Luke's Men's Club: addition for Mr. W. H. Higson.

Cotton Store, Adelaide Street, for Messrs. Tootal, Broadhurst, Lee & Co.

King Edward VII. Memorial Nursing Home. Messrs. Henderson & Brown, architects.

Wilkinson Sanatorium: women's five-bed ward.

Additions to Works, Mortfield Lane, for Messrs. T. Cross & Co.

Wigan.—Infirmary: out-patients' department (£10,000).

LEICESTERSHIRE.

Evvington and Stoughton.—King George V. Village Hall (£1,100).*Leicester*.—Royal Infirmary: children's hospital, operating theatre, &c. Messrs. Everard, Son & Pick, F.R.I.B.A., architects.

LINCOLNSHIRE.

Lincoln.—Church of St. Katharine and All Saints', Clumber Street and Newark Road; 300 sittings (£1,300).

MIDDLESEX.

Harefield.—Cottage, Park Lane, for Mr. G. Winship.*Northolt*.—Thirteen houses, Church Rd., for Mr. Birks.*Staines*.—Cottage hospital (£2,000).

NORFOLK.

Caister-on-Sea.—Unionist Hall. Mr. A. S. Hewitt, A.R.I.B.A. (of Great Yarmouth), architect.

NORTHAMPTONSHIRE.

Holcot.—Infectious Diseases Hospital. Mr. A. Lewis, R.D. Council surveyor for Brixworth.

NORTHUMBERLAND.

Newburn.—Fifty-eight houses, Walbottle, for the U.D.C. Mr. T. Gregory, Council surveyor.

NOTTINGHAMSHIRE.

Huthwaite.—Council School.*Walkeringham*.—Council mixed school for 140 places.*Worksop*.—Council School, Stanley Street.

SOMERSET.

Bath.—St. Bartholomew's (New) Church.

STAFFORDSHIRE.

Longton.—Cottage Hospital extensions.*Smethwick*.—Offices, Alma Street, for the Imperial Bedstead Co.

Shop alterations, 56 Cape Hill, for Boots, Ltd.

Stores, Grove Street, for the Centaur Tool Co.

SURREY.

Camberley.—Council Schools: improvements (£1,650).*Guildford*.—Alterations, &c., to Council Schools. Mr. C. G. Mason, A.M.I.C.E., Borough surveyor.*Kingston-on-Thames*.—Almshouses, London Road: two houses. Mr. Hardwick, F.R.I.B.A., architect.*Parr's Bank, Market Place*. Mr. W. E. Hewitt, A.R.I.B.A. (of London), architect.

Two houses, Woodbines Avenue, for Mr. Moulard.

House, Albany Park Road, for Mr. E. Webb.

"Three Tuns" P.H.: rebuilding.

New premises in Church, Clarence, and Wood Streets, for Messrs. North & Robin.

SUSSEX.

Balcombe.—House, Highley Manor Estate, for Mr. Walker.*Hastings*.—Mission Church, St. Leonards.

WARWICKSHIRE.

Coventry.—Two houses, Styvedale Avenue, for Mr. Cox.

House, Broadway, for Mr. G. Blakeman.

Two houses, Broadway, for Mr. A. C. Taylor.

Two houses, Bray's Lane, for Mr. G. W. Huggett.

Two houses, Beaconsfield Rd., for Jervis Brothers.

House, Belvedere Road, for Mr. L. Aldridge.

House, stable, &c., Cross Road, for Mrs. Ely.

Two houses, Huntingdon Road, for Messrs. Seal & Tierney.

Two houses, Irving Road; and two houses, Northfield Road, for Mr. T. Ward.

House, Queen Mary's Road, for Mr. A. Orr.

Two houses, Queen Mary's Road, for Mr. C. Orr.

Eight houses, Ransom Road, for Mr. H. Goode.

Three houses, St. Osburg's Rd., for Jervis Brothers.

Two houses, Stanway Road, for Mr. C. Humphreys.

Two houses, Stepney Road, for Mr. A. Jeffs.

Eight houses, Awson Street, for Mr. A. Harris.

House, May Street, for Mr. J. Whetstone.

House and workshop, Harnall Lane East, for Mr. W. Satchwell.

Offices, Northey Road, for the Sterling Metals, Ltd.

Alterations to premises, Victoria Street, for the Coventry Perseverance Co-operative Society, Ltd.

Printing Works, Cheylesmore: extensions for Messrs. W. W. Curtis, Ltd.

Shop premises, corner of Spon and Windsor Streets: additions for Mr. F. Bird.

Sub-station, off Aldbourne Road, for the Corporation Electricity Department.

Technical Institute.

Weaving shed, Carlton Road, for Mr. W. Laird.

Foleshill.—Public Elementary School, Windmill Lane, for 340 places.

WILTSHIRE.

Aldisbury.—Wesleyan Sunday School.

YORKSHIRE.

Bridlington.—Twenty-five workmen's dwellings, Watson's Balk, Marton Road. Mr. E. R. Mathews, Borough surveyor.

Cawood.—Wesleyan Church (£1,000).

Horsforth.—Infants' school for 200 places (£2,400).

Huddersfield.—Eleven houses and shop, Raw Nook Road, Salendine Nook, Longwood. Mr. S. M. Balmford (of Longwood), architect.

Keighley.—Congregational Mission Church, Queen's Road, Ingrow. Messrs. J. Haggas & Sons, architects.

Institute extensions (£13,000).

Leeds.—Alterations to Scotsman Hotel, Call Lane. Mr. J. Jackson (of Bradford), architect.

Malton.—Opera house.

Selby.—Fifteen cottages, East Common Lane.

WALES.

Bluenagarw.—"Garrog House": re-building. Messrs. Cook & Edwards (of Bridgend), architects.

Cardiff.—National Museum of Wales, Cathays Park. Messrs. Smith & Brewer, F.F.R.I.B.A. (of London), architects.

Crickhowell.—Unionist Club-house. Mr. J. V. Richards, architect.

Glyn Neath.—"Crown Inn": alterations. Mr. J. C. Rees (of Neath), architect.

SCOTLAND.

Edinburgh.—St. Bernard's School, Dean Park Street: alterations.

Glasgow.—Electricity sub-station, Vinicombe Street, Hillhead. Mr. W. W. Lackie, electrical engineer.

Public baths and wash-houses, Douglas and Walker Streets, Partick.

Lesser Hall and Offices, Maxwell Street, Partick, for the Town Council. Mr. J. Bryce, Burgh surveyor.

Five semi-detached villas, Crown Circus, Partick.

Parish church and beadle's house, Squire Street, Whiteinch.

Greenock.—Public baths and wash-houses, Ann Street.

Inverurie (near).—House and steading, Mains of Flack: additions and alterations. Messrs. Walker & Duncan, C.E. (of Aberdeen), architects.

Paisley.—Alterations to 17 High Street and Cumberland Place, for construction of a picture theatre for the Paisley Picture Theatre, Ltd.

Perth.—Infirmary: children's ward.

IRELAND.

Cork.—House, Glasheen Road. Mr. D. M. O'Connor, A.R.I.B.A., M.R.I.A.I., architect.

HOUSE BUILDING EXTRAORDINARY.

In the old days, that are not really so very long ago, when the Boers first migrated into what is now the Transvaal, it was arranged amongst the "trekkers" that any of the party who should desire a certain part of the land could claim it by erecting a dwelling-house on it, and, as soon as the house was completed, the land for a specified distance round it became his property. It often happened that several of the pilgrims fancied the same land, and each, with the aid of his family, set to work to erect a dwelling. In this case the man whose building was completed first received the property, and the losers, in a spirit of revenge, invariably pulled down the buildings they had erected. This pulling down was an easy matter, as the structures were "rushed" up at a speed that would astonish anyone conversant with the ordinary lethargy of the Boer. Very often disputes occurred as to the weather-proof nature of the houses so put up, and the leaders of the "trekkers" were called in to adjudicate in the matter. Many of these old houses are still standing, and the owners of the land on which they stand, who of course have now other and more commodious dwellings, point them out with pride to visitors and describe how their grandfathers "bought" the land by putting up the house. Some of these old houses have been turned into "guest-rooms," much to the disgust of the older people, for according to all tradition the "guest-room" should be the most comfortable and ornamental apartment. As guests, however, are few and far between in the rural districts of the Transvaal, this is not such a serious matter. It is the modern spirit of breaking

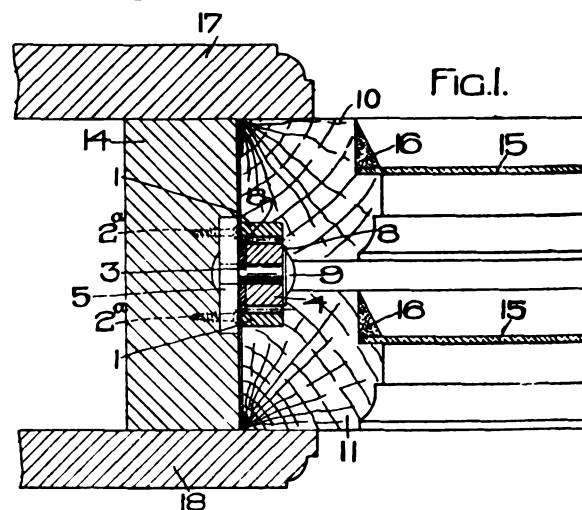
away from old associations that causes the remonstrance. Some of these old houses are long, low buildings, the predecessors of the modern Boer homestead, others of different shape. The shape did not matter, the main object being to satisfy the judges. It is said, however, that these worthies possessed all the acquisitiveness that is charged against the Boer, and were not always above accepting a gift, and that "a good beast (ox) and a bad house often went together." But possibly this is a libel.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

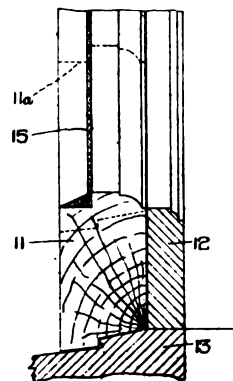
The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 16,471. July 18, 1911.—Improvements in or relating to window sashes. James Johnston, the Diamond and Butcher Street, Londonderry, architect and surveyor. This invention relates to window sashes which are provided with toothed racks, one upon the upper and another upon the lower sash, adapted to co-operate with one or more toothed pinions rotatably mounted upon spindles secured to brackets in such a manner that the two sashes counterbalance each other, the movement of one sash effecting the movement of the other. Fig. 1 is a sectional plan of one side of a window



frame. Fig. 2 is a sectional side elevation showing a method of preventing air from entering by one sash when the other sash is open. The toothed racks 1 are attached to the sashes

FIG. 2.



by wood screws. The pin 3 on which the pinion 4 rotates is fitted on a bracket 5 fixed by screws 2a to the window frame 14, and has washers 8, one on each face of the pinion 4, the latter being retained by the head 9. One pinion is arranged on each side of the window, with corresponding pairs of toothed racks. As the upper sash could not be opened without opening the lower one 11 in order to permit of the upper sash being opened, while precluding ingress of air at the bottom, a bead 12 may be fixed on the sill 13 of the window frame, so that the sashes are moved through a distance equal to the depth of the said bead before air can enter at the bottom, as shown in fig. 2, in which the dotted lines 11a represent the lower sash raised so as to open the top sash. 15 is the window pane and 17 and 18 the outside and inside window casing. May 15, 1912.

PATENT SPECIFICATIONS PUBLISHED JUNE 27, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

- 13,334. June 2, 1911.—A. F. Harrison, "Tilecot," Curzon Road, Weybridge, and O. L. Peard, 42 Dingwall Road, Croydon. Heating appliances.
- 13,423. June 3, 1911.—J. T. M. Johnston, 79 Mark Lane, E.C. Portable tar boiling apparatus.
- 13,574. June 6, 1911.—M. A. Bleichert and M. P. Bleichert, Leipzig, Gohlis, Germany. Remote controlling apparatus for electrically actuated winches and the like.
- 7,936. Mar. 30, 1911.—W. R. Cooper, 113 Tulse Hill, S.W. Apparatus for heating water or other liquids.
- 11,475. Nov. 9, 1911.—J. G. Cracknell, 21 Whittall Street, Birmingham. Vacuum cleaners.
- 13,179. June 1, 1911.—J. H. Secker, 33 Mackenzie Street, Slough. Automatic locking joint for water stand-posts, hydrants, and the like.
- 13,255. June 2, 1911.—James Heaton, The Ravenhead Sanitary Pipe and Brick Co., Ltd., St. Helens, Lancaster. Mode of, and apparatus for, manufacturing roofing and like tiles.
- 13,752. June 9, 1911.—E. J. Bull, district engineer, Chupra, Sarun District, Bengal. Rolled steel door and window frames.
- 15,430. July 3, 1911.—C. J. Darnall, chemist, Washington, D.C. Method and apparatus for purifying water and sewage.
- 16,492. July 18, 1911.—W. H. Fenn, Constantine Road, Ipswich. Removable grip joint for wood or metal work.
- 18,324. Aug. 14, 1911.—Frank Rippingille, The Cottage, Four Oaks, Sutton Coldfield, Birmingham. Electrical heating and air circulating appliances.
- 18,583. Aug. 17, 1911.—M. J. Railing and Geo. Maurice, 67 Queen Victoria Street, E.C. Means for supporting and shading electric lamps.
- 19,706. Sept. 5, 1911.—F. E. Smith, 7 Cotham Grove, Bristol, and W. H. Smith, 6 Elton Road, Bishopston, Bristol. Extension ladder.
- 20,150. Sept. 11, 1911.—G. W. Durbrow, 924 West 10th Street, Los Angeles, California. Method and apparatus for filtering water.
- 22,359. Oct. 10, 1911.—Date claimed under International Convention Oct. 10, 1910. Dr. August Kahr, Kattowitz, Upper Schleswig, Germany. Machine for manufacturing hollow bricks closed on all sides.
- 26,332. Nov. 24, 1911.—Otto Rechnitz, 1 Kaiserstr., Cottbus, Germany. Lathing for plaster-work and the like.
- 28,910 and 28,911. Dec. 22, 1911.—W. B. Hough, 1,340 Monadnock Block, Chicago, U.S. Placing and securing devices for the reinforcing members in reinforced concrete construction.
- 29,222. Dec. 28, 1911.—William Schmah, The Armourduct Manufacturing Co., Ltd., and Magic Appliances Ltd., 6 Farringdon Avenue, E.C. Vacuum cleaning machines for the extraction of dust and the like.
491. Jan. 6, 1912.—A. W. Sparks, 14 Bridge Street, Bristol. Anti-vibration suspension devices applicable for electric lamps.
- 1,360. Jan. 17, 1912.—H. R. Wardell, 301 W. 108th Street, New York. Bituminous structural materials.
- 1,829. Jan. 23, 1912.—E. M. T. Boddam, Bedford Gardens House, Bedford Gardens, W. Electrically driven hydraulic lifts.
- 2,231. Jan. 27, 1912.—Thomas White, of Thomas White & Sons, Ltd., Laigh Park, Paisley. Wood turning or like machines.
- 3,556. Feb. 12, 1912.—Date claimed under International Convention Feb. 11, 1911. August Schaeffer, 40 Moseistr., Frankfurt-on-Maine. Electrically driven fans.
- 3,562. Feb. 13, 1912.—James Neave, 38 Cleveland Road, George Lane, S. Woodford. Combined permanent way gully.
- 4,909. Feb. 27, 1912.—Nicola Faraldi, 5 Galleria Mazzini, Genoa. Manufacture of artificial stone blocks.
- 5,958. Mar. 9, 1912.—Date claimed under International Convention March 22, 1911. J. H. Wilden, 11 Kaiser Wilhelmstr., Dusseldorf. Method and means for protecting the putty in glazed work.
- 6,327. March 14, 1912.—Date claimed under International Convention March 17, 1911. Fabrik Explosions-sicherer Gefasse, G.m.b.H. Salzkotten, Westfalen. Process for extinguishing fires.

11,222. May 11, 1912.—Chas. Showell, Stirchley Brass-foundry, Stirchley, Birmingham, and John Scrivens, 160 Maryvale Road, Bournville, Birmingham. Spring controlled doors.

L.C.C. SCHOOL OF BUILDING, BRIXTON.

THE Education Committee of the London County Council have considered as to the desirability of establishing courses of instruction suitable for day students whose age and previous education are above the age and standard of education fixed by the Council for admission to the day technical school for boys at the School of Building, Brixton. Applications are frequently received from sons of builders and others whose future in connection with the building industry is assured, and it is almost invariably found that their education has been of a type more advanced than is usually the case with boys who attend the day technical school, most of whom have received their preliminary general education at elementary schools. The Committee are convinced that a need exists for instruction of a higher kind than is at present available during the day time, and are of opinion that steps should be taken to provide facilities for more advanced students from September, 1912. They do not think it will be necessary to increase the equipment of the school to any great extent, nor do they anticipate that the cost of materials for the practical classes will be large. The chief requirement will be additional staff, but their proposals involve only a small increase in this direction, as a good deal of the work can be undertaken by the present whole-time teachers.

For the first year they think the following additional appointments will be sufficient: (i.) a visiting teacher of quantity surveying for one afternoon a week at 15s. per attendance; (ii.) a visiting teacher of reinforced concrete for one afternoon a week at 15s. per attendance; (iii.) a visiting teacher of land surveying for one afternoon a week at 15s. per attendance; (iv.) a visiting teacher of architectural drawing for one morning a week at 12s. 6d. per attendance; (v.) a visiting teacher of physical exercises for one afternoon a week at 10s. 6d. per attendance.

For the second year they anticipate that it will be necessary to appoint the following additional staff: (i.) a visiting teacher of freehand and perspective drawing for one attendance a week at 10s. 6d. per attendance; (ii.) a visiting teacher of physical exercises for one attendance a week at 10s. 6d. per attendance; and (iii.) visiting teachers of mathematics, reinforced concrete, land surveying, quantity surveying and mechanics, each for two attendances a week at 15s. per attendance. The above-mentioned rates of pay are all in accordance with the scale approved by the Council for visiting teachers in technical institutes and schools of art.

In certain cases it may be desirable that students should be admitted to the course for part time only, and in framing the following scale of fees the Committee have made provision for the fees to be paid by such part-time students: For the complete course, £3 3s. per term; for five two-hour lessons per week, £1 11s. 6d. per term; for any one subject, 10s. 6d. per term.

The following is a tabulated statement of the expenditure involved in the proposal:—

Expenditure—	First and Second Year.		Receipts—	First and Second Year.	
	Year.	Year.		Year.	Year.
Staff and materials ...	186	578	Fees of students and Board of Education grant ...	266 15	533 10

It will be observed that the ultimate net cost of the proposals will be about £45 a year. There will be no additional expenditure either during the first year of the course (September, 1912, to September, 1913) or during the current financial year (i.e., to March 31, 1912). Provision for the expenditure involved in staff and materials during the current financial year has been made in vote No. 194 of the annual maintenance votes, 1912-13. The Committee recommend:—

(a) That, as from September, 1912, advanced day classes of instruction in architectural and building trade subjects be provided at the L.C.C. School of Building, Brixton, suitable for students whose age and previous education are above the age and standard of education at present fixed for the admission of boys to the day technical school conducted thereat; and that such advanced courses be designated the senior day technical school of the L.C.C. School of Building, Brixton.

(b) That students be admitted either to the complete course specified in the foregoing resolution (a), or to part of the course, as may be considered desirable, and be charged fees as follows: For the complete course, £3 3s. a term (three terms a year), or £9 9s. a year; for five two-hour lessons a week, £1 11s. 6d. a term; for any one subject, 10s. 6d. a term.

The report of the Finance Committee under standing orders is to the following effect: The Finance Committee have no observations to offer.

THE JAPANESE AS BUILDERS.

OVER £1,000,000 of private capital has, according to the local Japanese civil administration been invested in buildings in Dalny, Manchuria. Discussing the progress of foreign ideas, the American Consul at Dalny says practically all of the residential buildings erected in recent years were designed and constructed by Japanese architects and contractors, and although the buildings are meant to be of foreign pattern in many cases the impractical interior arrangement leaves much to be desired. Some of the houses have been erected without chimneys, and, considering the zero temperature prevailing during the winter months, surprise must be expressed at this apparent oversight. The lack of chimneys or the impractical nature of those installed has the result of making scores of buildings unsightly in appearance during the cold winter months, as stove pipes have to be stuck out of the windows and elevated to a "safe" sky line.

GLASGOW MUNICIPAL BUILDINGS COMPETITION.

THE Glasgow Corporation's Committee on Municipal Buildings have now approved of the general conditions for the competitive designs to be invited from outside architects for the proposed extension of the buildings. The extension will be erected upon ground on the east side of John Street. Mr. John J. Burnet, LL.D., A.R.S.A., has been appointed by the Corporation to act for them in the competition, which closes on October 29. From the preliminary sketches not more than five designs will be selected, and the authors, who will be invited to submit final designs for competition, will each receive an honorarium of 100 guineas. The Corporation reserve to themselves the right to invite not more than three other well-known architects who may not have submitted designs in the first competition to join in the final competition, and it is the intention to entrust the author of the design placed first by the assessor with the carrying out of the work. The extension may be designed as a detached building to afford all the accommodation for the various departments, but if so designed adequate connection with the existing building must be shown at least on the level of the second floor. The style of the building is left to the competitors, but its harmony with the City Chambers and, if possible, with the existing Sanitary Chambers in Cochrane Street should be carefully considered. It is further required that the extension should be executed in freestone in keeping with that of the existing building. The Corporation are advised that a building suitable for their requirements should be obtained for £150,000, including the expense of alteration of the existing building.

VARIETIES.

THE Gateshead Guardians are about to borrow £6,768 for the purpose of erecting a boiler-house and executing other works at the Union institution at Shotley Bridge.

MESSRS. LOVEGROVE & PAPWORTH, architects, Town Hall Chambers, Old Street, E.C., have prepared plans of a cinematograph hall proposed to be erected at 100 and 102 High Street, Wandsworth.

MESSRS. W. WOODWARD & SONS and Mr. G. W. Booth have submitted plans to the London County Council showing the erection of a cinematograph hall on a site in Regent Street, now partly occupied by the New Gallery Restaurant. It is believed that the expenditure involved will be about £60,000.

THE Theatres and Music Halls Committee of the London County Council, after considering plans submitted by Messrs. Wylson & Long for the reconstruction of the Tivoli Music Hall, Strand, W.C., recommend that a certificate should be granted subject to twenty-seven conditions being complied with. Seating accommodation is shown to be provided for 1,580 persons.

THE Secretary of State for the Home Department has decided that the remuneration for the year 1912 of the members of the Tribunal of Appeal constituted under the London Building Acts shall continue to be on the scale laid down in 1895 and extended in operation until the end of the year 1911—namely, for each member of the tribunal, three guineas for the first hour and two guineas for each subsequent hour of each day's sitting.

THE Glasgow School Board have approved of sketch plans showing a permanent school building at Garrioch for the accommodation of 200 physically and 80 mentally defective children, and providing, besides ordinary class-rooms, rooms for cooking, laundry work, manual instruction, tailoring, and shoemaking, a resting shed, and a janitor's house. The school is to be built of brick, and will be the first in Scotland planned on the open-air principle. The estimated cost is £9,600.

MESSRS. "DAY AND NIGHT SCREENS," LTD., of 38A Berners Street, Oxford Street, W., are showing at the White City, Shepherd's Bush, the latest development of cinematography. The "day and night" screen has a specially silvery-coated surface upon a moisture proof canvas backing. The pictures projected on it are clear, whether they be shown in broad daylight or in the dark. Commercially, the open-air cinema promises to be successful, as there is said to be an economy of current in working of from 50 to 80 per cent.

THE *Nachrichten für Handel* (Berlin) of June 13 states that arrangements have been made for the erection of five new large hotels in Bucharest, Roumania. In addition, the following buildings are being constructed:—Carol I. University, Military Club, "Credit Roman" Bank, Town Hall, Senate House, and the "Agricola" Insurance Company's premises. Roumanian cement manufacturers had arranged to produce only 12,000 waggon loads of cement this year, but they have orders on hand for more than 24,000 waggon loads.

THE Improvements Committee of the London County Council report as follows:—"The contract for the sale to the Commonwealth of Australia of the eastern horn of the crescent site between the Strand, Aldwych, and Melbourne Place provided for the elevations of the buildings proposed to be erected on the site to be submitted to, and approved by, the Council. Drawings have now been submitted of the elevations of the proposed buildings. The elevations, which it is proposed shall be constructed in Portland stone, follow the scheme outlined by Mr. Norman Shaw, R.A., when the Victoria Government building was erected, and it is intended to effect a slight alteration in the latter building in order that it shall accord with the general scheme. The design is very bold and on a large scale, and we have no hesitation in recommending the Council to approve the scheme."

SIR FRANK WILLS, F.R.I.B.A., is to be congratulated on receiving the honour of knighthood at the hands of his Majesty in connection with King George's visit to Bristol last week. Sir Frank Wills, who is Lord Mayor, is a son of the late Mr. H. O. Wills, one of the founders of the tobacco business carried on by W. D. & H. O. Wills. He is also a half-brother of the late Mr. H. O. Wills, of Kelston, who subscribed £100,000 to the fund for establishing Bristol University, and a cousin of the late Lord Winterstoke. Mr. Frank William Wills (now Sir Frank Wills) was born at Bristol in 1852, and educated at Amershall Hall, Reading. By profession he is an architect and surveyor, and many buildings in Bristol and neighbourhood, as well as in other parts of the country, including the Bedminster tobacco factory of W. D. & H. O. Wills, the Art Gallery, the St. George Library were erected from his designs. He is a Liberal in politics. The Lord Mayor did not enter the Council until 1908.

A MEETING of the General Committee of the George Petrie Memorial was held on Saturday last at the rooms of the Royal Society of Antiquaries, Stephen's Green, Dublin. G.N. Count Plunkett, K.C.H.S., was in the chair. It was decided to arrange for a popular lecture, illustrated by lantern views, descriptive of the life and works of Dr. Petrie, and detailing his great services to Irish archaeology, in particular in laying the foundations of our present knowledge of early Irish architecture to be held in the coming autumn. The Right Hon. M. F. Cox, M.A., consented to deliver the lecture, and Lord Ardilaun was invited to take the chair on the occasion. It was decided to widen the scope of the project so as to include the erection of a bust and suitable inscription, or other worthy monument in some public place, in addition to the erection of a monument over the grave. The Executive Committee includes Count Plunkett, Hon. A.R.I.B.A., Mr. R. M. Butler, F.R.I.B.A. (Hon. Secretary), Mr. Robert Cochrane, F.R.I.B.A., and Mr. P. J. Lynch, M.R.I.A.I.

CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

GLASGOW.—The Corporation of the City of Glasgow invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—July 22.—Architects are invited to send in plans for two semi-detached houses to be erected at the District Lunatic Asylum, Cork, the cost not to exceed £600 each. Each house to consist of drawing-room, dining-room, two principal bedrooms, servant's room, bath-room (supplied with hot and cold water apparatus), kitchen, pantry, and scullery, with hot and cold water, &c. A prize of £10 will be given for the plans deemed most suitable by the Committee of Management. Plans to be lodged by noon on July 22 with the Resident Medical Superintendent, District Lunatic Asylum, Cork.

CONTRACTS OPEN.

ALDERSHOT.—July 17.—For construction of reinforced concrete coal bunkers, engine shed, &c. Aldershot Gas, Water and District Lighting Co., Victoria Road, Aldershot.

ARMLEY.—July 16.—For erection of two dwellings in Esmond Terrace, for the Leeds Improvements Committee. Mr. W. T. Lancashire, city engineer, Municipal Buildings, Leeds.

ARMLEY.—July 30.—For the whole or any portion of the works required to be executed in the erection of United Methodist Church school, &c., at Colton Road. Send applications at once to Mr. J. Auty, A.R.I.B.A., architect, Peel Street, Morley.

ASHFORD.—July 20.—For the execution of certain repairs to the greenhouses at the County School for Girls. Mr. W. J. Spicer, local secretary, 19 Bank Street, Ashford, Kent.

BARROW-IN-FURNESS.—July 18.—For the alterations to St. George's School. Messrs. Settle & Brundrit, A.R.I.B.A., Barrow-in-Furness and Ulverston.

BECCLES.—For erection of new shops, with showrooms, millinery, dressmaking, and stock rooms, for the Working Men's Co-operative Association, Ltd. Send applications and 10s. deposit at once to Mr. A. Pells, F.S.I., architect, 13 London Road, Beccles.

BECKENHAM.—July 22.—For the erection of caretaker's lodge, public conveniences, &c., in Kelsey Park. Mr. J. A. Angell, surveyor, Beckenham. Send £2 deposit to the Collector.

BELPER.—July 24.—For the erection of goods shed and offices in brick for the Midland Railway Co. The Engineer's Office, Derby Station.

BIRMINGHAM.—July 30.—For the erection of a Corporation Tramway Depot in Highgate Road, Sparkbrook. Send applications and £3 3s. deposit by July 17 to Mr. Christopher Silk, quantity surveyor, 33 Newhall Street, Birmingham. Messrs. Harrison & Cox, architects, Council Chambers, 109 Colmore Row, Birmingham.

BLACKWOOD.—July 22.—For erection of ten or more semi-detached houses in Woodbine Road, Blackwood (Mon.), for the trustees of the Woodbine Building Club (No. 3). Messrs. W. Morgan Lewis & Walters, architects and surveyors, Pontypridd, or Mr. J. E. Davies, accountant, Blackwood.

BOLTON.—July 23.—For erection of the King Edward VII. Memorial Nurses' Home at the Bolton Infirmary. Send applications and £2 2s. deposit to Messrs. Henderson & Brown, architects, 2 Fold Street, Bolton.

BRINSWORTH.—July 19.—For the following works: Brinsworth Council School, alterations to playground entrance, rebuilding and repairing boundary walls, &c. (builder). The Education Architect, County Hall, Wakefield.

CANTERBURY.—July 20.—For certain painting and repairs required to be carried out at the St. Stephen's Hackington Council School. Mr. H. Fielding, correspondent, 15 Burgate Street, Canterbury, Kent.

CHESTERFIELD.—July 24.—For erection of a new lock-up, courthouse, and deputy chief constable's residence, &c., in Tipton Road and Malkin Street, for the Derbyshire Standing Joint Committee. Deposit £2 2s. Messrs. Hunter & Woodhouse, architects, Belper, Derbyshire.

CRIGGLESTONE.—July 16.—For asphaltting of playgrounds and for the erection of a boundary wall and other mason's work at the Council School. Mr. Benj. Sheard, divisional clerk, W.R. Education Offices, Northgate, Wakefield.

DALTON.—July 17.—For erection of two dwelling-houses Dyson Street, off Long Lane. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

DARTFORD.—July 24.—The Metropolitan Asylums Board invite tenders for constructing a glazed roof over workshops' yard at Darenth Industrial Colony, Dartford, Kent. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief. The office of the Board, Embankment, E.C.

DEVON.—July 24.—The Devon County Education Committee are prepared to receive tenders for the following work at Council Schools:—Blackawton: Alterations to offices and drainage; Bridford: Ventilation and new drainage, &c.; Broadhempston: Alterations, ventilation, &c.; Great Torrington: Enlargement, &c.; Holbeton: Alterations, ventilation, &c.; Lydford: Alterations, ventilation, new windows, playsheds, &c.; Okehampton (North Street): Alterations, heating and ventilation, and new offices, &c.; Plymouth (Oreston): Alterations; Plymouth (Goosewell): Ventilation and improvement of the lighting, &c.; Stoke Rivers: Enlargement, &c.; Westleigh: New cloakrooms, ventilation, new playsheds, &c. The drawings, specifications, and the conditions of contract may be seen at the respective schools on and after July 15, between 9.30 A.M. and 4.30 P.M. (Saturday excepted). The Architect's Office, 1 Richmond Road, Exeter.

EARLESTOWN (LANCS.).—July 18.—For erection of an infants' school for 300 children in Lime Street. Deposit £2. Mr. H. Littler, County architect, 16 Ribblesdale Place, Preston.

EAST BARNET.—July 17.—For certain builder's work in connection with the reconstruction of the carpenter's shop, &c., at the Boys' Farm Home. Messrs. J. C. Melliss & Co., engineers, 264 Gresham House, Old Broad Street, E.C.

EAST BARNET.—July 17.—For the construction of a reinforced concrete water tower to hold 25,000 gallons at the Boys' Farm Home. Deposit £2 2s. Messrs. J. C. Melliss & Co., engineers, 264 Gresham House, Old Broad Street, E.C.

EDINBURGH.—July 23.—The Commissioners of H.M. Works and Public Buildings invite tenders for the reconstruction of the lavatories at the General Register House, Edinburgh. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. H.M. Works, 3 Parliament Square, Edinburgh.

EMBLETON.—July 19.—For the erection of a fountain at Embleton, Northumberland, as a King George V. Coronation memorial. Mr. G. Reavell, jun., A.R.I.B.A., Lloyd's Bank Chambers, Alnwick.

EVESHAM.—July 22.—For carrying out alterations and additions to the road foreman's cottage situate at the corner of Avon Street and Briar Close. The Borough Surveyor, Town Hall, Evesham.

FIR TREE.—July 16.—For repairs at the Council School (specification only). Mr. W. Ruskworth, Shire Hall, Durham.

GLASGOW.—July 20.—For the relining with firebrick of the chimney stalk at Kelvinhaugh refuse despatch works, Gilbert Street, for the Corporation. Mr. D. M'Coll, superintendent of cleansing, 38 Cochrane Street, Glasgow.

HANDSWORTH (Yorks.).—July 19.—The West Riding Education Committee invite whole or separate tenders for the following works:—Handsworth Intake Council School: Additions and alterations (builder, joiner, slater, plumber, plasterer, and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

HEREFORD.—July 17.—For erection and completion of a new roof with lantern lights on the butter market. Deposit £1 1s. The City Surveyor, Hereford.

IRELAND.—July 16.—For erection of five houses, for the Clonakilty Urban District Council. Deposit £5. Mr. J. Donovan, town clerk, Town Hall, Clonakilty.

ISLEWORTH.—July 17.—For certain additions and alterations at the laundry of the workhouse, for the Guardians of Brentford Union. Deposit £2 2s. Mr. W. Stephens, clerk to the Guardians, Union Offices, Isleworth.

IRELAND.—July 17.—For the erection of cottages and fencing of plots, and the repair of existing fences, for the Kinsale Rural District Council. Mr. J. Murphy, clerk of Council, Council Office, Kinsale Workhouse.

LANSALLOS.—July 22.—For the erection of new dairies, alterations, and adaptations to farmhouse and farm buildings, new walls, &c., at Great Kellow Farm, Lansallos, for the Small Holdings Committee of the Cornwall County Council. The County Land Agent, County Hall, Truro.

LEEDS.—July 19.—For the structural steel and ironwork required in the erection of a laundry in Osmondthorpe Lane, York Road, for the Leeds Industrial Co-operative Society, Ltd. The Building Department, No. 24 Meadow Road, Leeds.

LONDON.—July 16.—For erection of the Museum telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W.

LONDON.—July 16.—The Commissioners of H.M. Works and Public Buildings invite tenders for the extension of the New Public Offices, Westminster (superstructure). Deposit £1 1s. Sir Henry Tanner, F.R.I.B.A., &c., H.M. Office of Works, Storey's Gate, S.W.

LONDON.—July 17.—For demolishing boiler house, chimney shaft, and other buildings at the North-Eastern Fever Hospital, St. Ann's Road, Tottenham, N., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, E.C.

LONDON.—July 17.—For repairs to economiser house and sinking of two additional piers for foundations, for the Fulham Borough Council. Mr. A. J. Fuller, Electricity Department, 603 Fulham Road, Fulham, S.W.

LONDON.—July 18.—For alterations and improvements to buildings, South Norwood Council School; (b) extension of building, mechanical engineering workshop, central polytechnic; and (c) internal and external painting at Education Office, for the Croydon Education Committee. Mr. J. Smyth, clerk, Education Office, Katharine Street, Croydon.

LONDON.—July 18.—For providing and laying "Armaded" flooring, plastering walls, and decorative works to wards 2 and 3, and female receiving ward of the infirmary, Marloes Road, W., for the Kensington Board of Guardians. Mr. W. R. Stephens, clerk, Guardians' Offices, Marloes Road, Kensington, W.

LONDON.—July 24.—The Metropolitan Asylums Board invite tenders for providing and fitting up of bed-pan and other sinks at the North-Western Fever Hospital, Lawn Road, Hampstead. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, the office of the Board, Embankment, E.C.

LONDON.—July 25.—For the erection of steel framing and zinc flats to second-floor sunning balconies at the St. James's Infirmary, Ouseley Road, Balham, S.W., for the Guardians of Wandsworth Union. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

NETHERTON.—July 16.—For the erection of a boundary wall and the asphaltting of the playgrounds at Netherton Council School, for the Horbury District Education Committee. Mr. Benj. Sheard, divisional clerk, W.R. Educational Offices, Northgate, Wakefield.

NORTH DALTON.—July 29.—For the erection and completion of two workmen's houses, for the Sunderland and South Shields Water Company at their North Dalton pumping station, near Murton. Deposit £2 2s. Mr. Alfred B. E. Blackburn, A.M.Inst.C.E., 29 John Street, Sunderland.

RAINHILL.—July 25.—For the erection of two cottages at the County Asylum. The Engineer's Office, Rainhill Asylum, Lancashire.

ROOSE.—July 24.—For an extension of the workhouse at Roose, for the Barrow-in-Furness Guardians. Mr. H. T. Fowler, A.R.I.B.A., Cornwallis Street, Barrow-in-Furness.

SALISBURY.—July 30.—For new oak sashes at the Council chamber. Mr. W. J. Goodwin, A.M.I.C.E., city engineer and surveyor, Municipal Offices, Salisbury.

SCOTLAND.—For the mason, joiner, plumber, plaster, slater, glazier, and painter works of new school at Muirhead of Liff, for the Liff, Benvie, and Invergowie School Board. Messrs. Thoms & Wilkie, F.R.I.B.A., 46 Reform Street, Dundee.

SCOTLAND.—July 18.—The Commissioners of H.M. Works and Public Buildings are prepared to receive tenders for the erection of a new Post Office at Wick. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. The Postmaster at Wick Post Office, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—July 29.—For mason and structural steel-work of new training college, Dundee, for the St. Andrew's Provincial Committee for the Training of Teachers. Deposit £1 1s. Mr. T. M. Cappon, F.R.I.B.A., architect, 32 Bank Street, Dundee.

SEDFIELD.—July 17.—For the restoration of and additions to the Parish Church (whole tenders only). Mr. W. H. Wood, F.R.I.B.A. (successor to the late C. Hodgson Fowler), architect, 20 Collingwood Street, Newcastle-on-Tyne, and 47 North Bailey, Durham.

SHEFFIELD.—July 26.—For the building extensions required in connection with the electric power station, Club Mill Lane, Neepsend. Deposit £5 5s. Mr. S. E. Fedden, general manager and engineer, Commercial Street, Sheffield.

SHERBURN HILL.—July 16.—For alterations and additions at the boys' and infants' schools. Mr. N. Richley, Shire Hall, Durham.

STAINLAND.—July 16.—For alterations and repairs (plumber, plasterer, and asphalter) at the West Vale Council school; also Bowling Green and Sowood Council schools, Stainland, alterations and repairs (builder, joiner, and asphalter), for the Greetland and Stainland Education Subcommittee. Mr. F. Parker, Education Offices, Elland.

STAINLAND.—July 19.—The West Riding Education Committee invite whole or separate tenders for the following works:—Stainland Bowling Green Council School, drainage (excavator, mason, and bricklayer, and plumber and sanitary engineer). The Education Architect, County Hall, Wakefield.

STEBBING.—July 19.—For alterations, additions, radiator heating apparatus, painting, &c., to be done during the summer holidays at the Stebbing Council School, for the Essex Education Committee. The Head Teacher.

SURBITON.—July 26.—The Urban District Council invite tenders from contractors of experience for the construction of the power station, destructor house, and other incidental works at the Sewage Disposal Works, Lower Marsh Lane, Surbiton. Send applications and £5 5s. deposit by July 18 to Mr. H. T. Mather, engineer, Council Offices, Ewell Road, Surbiton.

THATTO HEATH.—July 31.—For the erection and completion of a public library, together with all contingent works, situate at the south-west corner of Thatto Heath Park, near St. Helens. Mr. A. W. Bradley, M.I.C.E., borough engineer, Town Hall, St. Helens.

UPPER GREETLAND.—July 15.—For the mason's, joiner's, plumber's, plasterer's, slater's and painter's work required in the erection of parish church offices. Mr. F. Gordon, surveyor, Clifton, Brighouse.

WALES.—For alterations and additions to the Rose and Crown public-house, Goodwick, Haverfordwest. Deposit £1 1s. Mr. Hugh J. P. Thomas, architect, 9 Victoria Place, Haverfordwest.

WALES.—July 18.—For additions and alterations to Moriah Chapel, Llanelly, for the Trustees. Mr. J. Evans, C.E., 47 Stepney Street, Llanelly.

WALES.—July 18.—For the proposed new stable accommodation and engine house to be erected at rear of Blaenlae Street, Penygraig. The Committee of the Penygraig Industrial Society, Ltd., Penygraig.

WALES.—July 18.—For the erection of an Infirmary at Bangor, North Wales, for the Guardians of the Bangor and Beaumaris Union. (Mr. Frank Bellis, architect, Bangor.) Send applications and £5 5s. deposit (excepting such contractors who have already made this deposit) to Mr. R. Benjamin Evans, clerk to the Guardians, Union Offices, Bangor.

WALES.—July 19.—For certain works to thirty-eight semi-detached villas and for the completion of nine partly-erected houses in one terrace; also separate tender for making-up accommodation roads at Badminton Grove, Ebbw Vale, for the Blaen Ebbw Building Club. Messrs. Wm. Harris & Son, architects and surveyors, Bank Chambers, Bargoed, or Mr. W. Williams, accountant, Station Chambers, Ebbw Vale.

WALES.—July 19.—For competitive designs and tenders for the erection of a ferro-concrete boat shelter at the Roath Park, Cardiff, consisting of a flat promenade roof about 150 feet long by 21 feet wide, supported on columns and arched beams, for the Corporation. Mr. W. Harpur, M.I.C.E., city engineer, City Hall, Cardiff.

WALES.—July 19.—For alterations and additions to the administrative block at the union workhouse, Merthyr Tydfil. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WALES.—July 20.—For the erection of two semi-detached villas at Carnarvon. Mr. E. F. White, M.S.A., architect and surveyor, Carnarvon.

WALES.—July 24.—For certain reparative works to their institution at Quakers' Yard, Merthyr Tydfil, for the committee of the South Wales and Monmouthshire Truant School. The Truant School, or Mr. William Dowdeswell, M.S.A., architect, Treharris.

WALES.—July 26.—For the reconstruction of mountain retaining wall at Coedcae Road, Trehafod, Glam., 20 feet below road level and 13 feet above, for the Urban District Council. Deposit £1 1s. The Council Offices, Pentre.

WALES.—Aug. 7.—For rebuilding business premises in Rheola Street, Penrhiwceiber, for Messrs. the Penrhiwceiber Co-operative Society, Ltd. Deposit £2 2s. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

WEARHEAD.—July 15.—For erection of a church at Heathery Cleugh, Wearhead (whole tenders). Send applications for quantities by July 15 to Messrs. Clark & Moscrop, F.F.R.I.B.A., architects, Darlington.

WEDNESBURY.—July 31.—For alterations and additions to the public baths and municipal offices respectively, for the Corporation. Separate tenders. Send applications and £3 3s. deposit by July 13 to Messrs. Scott & Clark, M.S.A., architects, Lower High Street, Wednesbury.

WHITLEY.—July 16.—For erection of a shoeing and repair shop at the sewage pumping station, Whitley, near Coventry, for the Coventry Corporation. Deposit £1 1s. Mr. J. E. Swindlehurst, city engineer and surveyor, Saint Mary's Hall, Coventry.

WORSTHORNE.—July 27.—For the concrete work, &c., in the repair of the sewage tanks at Brownside, for the Burnley Rural District Council. Deposit £3 3s. Mr. H. Pritchard, M.I.M. and C.E., engineer to the Council, Union Offices, Burnley.

YEADON.—For the erection of a new chimney at Banksfield Dyeworks. Messrs. Scott & Rhodes, Banksfield Dyeworks, Yeadon, Yorkshire.

MR. GEORGE REAVELL, jun., A.R.I.B.A., Alnwick, has prepared a design for a granite fountain proposed to be erected opposite to the Dunstanborough Castle Hotel, Embleton, as a Coronation memorial. The plans were passed on Monday last by the Alnwick Rural Council.

THE City Engineer of Newcastle-on-Tyne, Mr. W. J. Steele, in his annual report, states that the number of dwellings erected during the year (each flat counted as a separate dwelling) has been 251, or 59 less than in the previous year, and the lowest number recorded since 1882. It is about 220 short of the number required to meet the estimated increase in the population. The estimated number of empty dwellings in the city is 500, and at the present rate of building this number should be rapidly reduced. The estimated cost of new buildings for which plans have been approved by the committee during the year is £341,351, compared with £391,271 for the year 1911, and £476,200 for the year 1910.

TENDERS.

BRUNTCLIFFE.

For the erection of club premises, for the Trustees of the Working-men's Club. Mr. T. A. BUTTERY, L.R.I.B.A., architect, Morley.

Accepted tenders.

Wain, Headingley, Leeds, mason	£597 11 0
Verity & Son, Pudsey, joiner	369 15 6
Firth, Morley, plumber	112 6 6
Iredale & Son, Birstall, plasterer	57 10 0
Kelleff, Morley, slater	44 10 0

CANTERBURY.

For erection of a laundry, boiler house, and chimney shaft at the workhouse. Mr. F. H. DORE, architect, Canterbury.

Shippam	£1,995 0 0
Lewis & Sons	1,921 0 0
Gentry	1,885 0 0
Browning	1,882 0 0
Mount	1,766 0 0
DADDS, Canterbury (accepted)	1,748 0 0
Dixon	1,744 0 0

CHELTENHAM.

For the execution of external painting at the Union Workhouse. Mr. THOMAS MALVERN, L.R.I.B.A., architect, Cheltenham.

Capper	£349 10 0
Skemp	189 0 0
Cresswell	168 6 3
EAGER & Co., Cheltenham (accepted)	159 0 0
Stone	123 12 6

CLEEVE HILL.

For the erection of a pair of semi-detached houses, Cleeve Hill, Gloucestershire. Mr. THOMAS MALVERN, L.R.I.B.A., architect, Cheltenham.

Collins & Godfrey	£1,476 0 0
Key	1,465 0 0
Saunders & Sons	1,314 0 0
Wilson	1,290 10 0
W. DREW, Golden Valley, near Cheltenham (accepted)	1,220 0 0

LONDON.

For erection of dwellings at Malvern Road, Kilburn, N.W., for the London and North-Western Railway. Messrs. JOSEPH & SMITHEM, architects and surveyors, 83 Queen Street, Cheapside.

Minter	£8,424 0 0
Godson & Sons	8,158 0 0
Ashby & Horner	8,156 0 0
Holloway Bros.	8,150 0 0
Downs	8,087 0 0
Lawrence & Sons	7,979 0 0
Miskin & Sons, Ltd.	7,780 0 0
Wallis & Sons	7,743 0 0

For alterations and additions at 45 Edwardes Square, Kensington, for Mr. Ernest George Brown. Messrs. JOSEPH & SMITHEM, architects and surveyors, 83 Queen Street, Cheapside.

Bovis & Co., Ltd.	£2,397 0 0
Price	2,247 0 0
Downs	2,236 0 0

For enclosing the Magdalen Road site, Wandsworth, along the Magdalen Road frontage, by a dwarf wall and railing of ornamental design, and on the other three sides by red brick walls 7 feet high, with wire netting 10 feet high on one of the walls, for the London County Council.

King & Son	£3,000 0 0
Smith & Sons	2,514 0 0
Rice & Son	2,497 0 0
Iathey Bros.	2,497 0 0
Garrett & Son	2,447 0 0
Wallis & Sons	2,376 0 0
Roberts & Co.	2,300 0 0
Jewell	2,222 0 0
Akers & Co.	2,167 0 0
Galbraith Bros.	2,155 0 0
Triggs & Co.	2,146 0 0
Fletcher	2,075 0 0
F. & G. FOSTER, Norwood Junction (recommended)	1,744 0 0
Architect's estimate	2,058 0 0

LONDON—continued.

For the erection on the Baltic Street site of a new house for the schoolkeeper, incorporation of additional land in the school site, and the adaptation of the schoolkeeper's old house as a housewifery centre, for the London County Council.

Heath & Sons	£1,708	6	10
Lenn, Thornton & Co.	1,658	14	11
McLaughlin & Harvey	1,649	0	0
Woodward & Co.	1,597	19	7
Garrett & Son	1,594	4	3
H. & E. Lea	1,553	0	0
W. F. Blay, Ltd.	1,489	0	0
L. H. & R. Roberts	1,434	0	0
C. P. ROBERTS & Co., LTD., Dalston (re- commended)	1,324	0	0
Architect's estimate	1,375	0	0

For erection of a bacteriological laboratory at the Public Health Offices, 43 Whitehorse Street, Ratcliff, for the Stepney Borough Council. Mr. M. W. JAMESON, A.M.Inst.C.E., borough engineer, Whitechapel.

Johnson Bros.	£421	0	0
Ashby & Horner	416	0	0
Lawrance & Sons	379	0	0
J. Johnston	371	0	0
Harris & Wardrop	353	0	0

For installing heating apparatus in connection with the erection of the L.C.C. secondary school, Streatham.

Palowkar & Sons	£1,560	0	0
Yetton & Co.	1,540	0	0
Burroughes & Sons	1,500	0	0
Grundy, Ltd.	1,497	0	0
Hayward Bros. & Eckstein	1,458	0	0
J. & F. May	1,339	0	0
Tilley Bros.	1,338	0	0
Cash & Co.	1,333	0	0
G. & E. Bradley	1,333	0	0
The Brightside Foundry & Engineering Co.	1,327	0	0
W. G. CANNON & SONS, LTD., Southwark (recommended)	1,320	0	0
Architect's estimate	1,400	0	0

For alterations and additions to medical superintendent's house at the Northern Convalescent Fever Hospital, Winchmore Hill, N., for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, London.

Cole & Son	£798	0	0
Holmes	589	10	0
Strand Building Co.	498	0	0
Reason	497	0	0
Sharpin	479	0	0
Engineer-in-chief's estimate	460	0	0

MOULTON.

For erection of dining-room and dormitory at the Grammar School. Mr. W. H. H. DAVIS, P.A.S.I., architect, Spalding.

Stapleton & Co.	£496	8	9
Lawes	455	10	0
Bateman & Son	410	0	0
Baker & Brett	398	16	0
Bore	380	0	0
Langley & Son	345	0	0
Wilkinson & Co.	329	10	0

SCOTLAND.

For construction of proposed sewage purification works, Laurencekirk, for the Town Council. Messrs. BRUCE & PROUDFOOT, civil engineers, Kirkcaldy.

Brickwork.

Scott & Son	£2,057	0	0
Brebner & Co.	2,042	0	0
Towse	1,995	0	0
Casey & Darragh	1,952	0	0
Bisset & Sons	1,842	0	0
Flett	1,694	0	0
Burness & Sons	1,695	0	0
Blaikie & Sons	1,566	0	0
Gray & Co.	1,484	0	0
Martin	1,395	0	0
Morrison	1,325	0	0
Wellwood & Lunan	1,294	0	0
Engineer's estimate	1,375	0	0

SCOTLAND—continued.**Concrete.**

Scott & Son	£2,026	0	0
Casey & Darragh	2,014	0	0
Towse	1,933	0	0
Brebner & Co.	1,925	0	0
Bisset & Son	1,750	0	0
Flett	1,676	0	0
Burness & Son	1,594	0	0
Blaikie & Sons	1,495	0	0
Gray & Co.	1,438	0	0
Martin	1,385	0	0
Morrison	1,336	0	0
WELLWOOD & LUNAN, Cardenden (accepted)	1,334	0	0
Engineer's estimate	1,372	0	0

WALTHAMSTOW.

For renovations and alterations to Schools, Walthamstow, for the Education Committee. Mr. H. PROSSER, M.S.A., architect to the Education Committee.

Wm. Morris School.

Blow	£399	14	1
A. G. BARTON, Walthamstow (accepted)	371	10	0

Coppermill Road School.

Barton	£446	0	0
Webb & Co.	438	0	0
Blow	309	9	3
J. & J. DEAN, Walthamstow (accepted)	285	0	0

Wood Street Schools.

Blow	£196	13	4
Barton	195	0	0
Sands	192	0	0
Lucas	175	0	0
J. & J. Dean	166	0	0
Wick	154	0	0
Webb & Co.	149	0	0
J. F. PENN, Walthamstow (accepted)	130	5	0

Selwyn Avenue School.

Barton	£123	10	0
Lucas	119	0	0
Webb & Co.	118	0	0
McBride	107	17	0
Wick	104	8	0
Randall	99	5	0
J. F. PENN, Walthamstow (accepted)	73	12	0

St. George's R.C. School.

J. SANDS, Walthamstow (accepted)	£26	10	0
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Forest Road Infants' School.

J. SANDS, Walthamstow (accepted)	£37	0	0
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PORT OF LONDON OFFICES COMPETITION.

The successful architect in the competition for the head offices about to be erected in Trinity Square, E.C., for the Port of London Authority, is Mr. Edwin Cooper, F.R.I.B.A., of 12 Gray's Inn Square, E.C.

It will be remembered that in response to the competition announced in November last inviting the submission of preliminary sketch designs 170 designs were received. The Authority, on the advice of their assessor, Sir Aston Webb, C.B., R.A., selected the six designs sent in by the following architects:—Mr. Robert Atkinson, A.R.I.B.A.; Messrs. J. A. Bowden & T. Wallis; Mr. Edwin Cooper, F.R.I.B.A.; Messrs. Lanchester & Rickards, F.R.I.B.A.; Mr. J. Reginald Truelove; Mr. Ernest W. Wray. The authors of these designs were invited to take part in the final competition at an honorarium of 200 guineas each. The award of Sir Aston Webb, C.B., R.A., is given above.

The six designs submitted in this final competition will be publicly exhibited at the River Offices of the Authority, Victoria Embankment, E.C., from July 15 to July 30, inclusive, between the hours of 10 A.M. and 4 P.M. (1 P.M. on Saturdays), with the exception of Wednesday, the 17th inst., when the designs will be on view from 2 to 4 P.M.

THE Hull City Council have adopted a scheme for building a secondary school for girls on the Cottingham Road at an estimated cost of £25,000 for buildings alone, exclusive of £900 for terraces and the cost of roads and fencing.

PLANS are now ready for the erection of a public infirmary in Nagyvárad, Austria-Hungary, the cost of which is estimated at £112,500. The hospital will have accommodation for 460 beds.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BERKSHIRE.

Reading.—Council Infant School: re-construction; also Manual Instruction Centre for boys.

Wantage.—Town Council cottages. Mr. Harris (Vale surveyor), architect.

CORNWALL.

Devoran.—Council School: additions and alterations. Mr. S. Hill (of Redruth), architect.

St. Austell.—Workhouse alterations (£2,000) and mortuary (£60). Mr. B. C. Andrew, architect.

CUMBERLAND.

Carlisle.—Bakery, Junction Street, for the South-End Co-operative Society.

Junior Council School for 400 places.

Workshop, Caldcotes, for Mr. T. Scott.

Works extension, Milbourne Street, for Messrs. A. Morton & Co.

Scotby Park.—House for Mr. H. Kelly.

DERBYSHIRE.

Chinley.—Derbyshire sanatorium.

DURHAM.

Coxhoe.—Public Hall (£1,000).

Houghton-le-Spring.—Offices (alterations) and reconstruction of four cottages for the Lambton and Hetton Collieries, Ltd.

Newfield.—Public Elementary School for 350 places.

Sherburn Hill.—Boys' and Infants' Schools: additions and alterations. Mr. N. Richley (of Durham), architect.

Wheatley Hill.—Parish Hall and Institute (£600). Messrs. Thompson & Denison (of Sunderland), builders.

ESSEX.

Stebbing.—Council School: additions and alterations.

GLOUCESTERSHIRE.

Bristol.—Fine Arts Academy: alterations and extensions.

Cinematograph Theatre, Union Street (£15,000).

HAMPSHIRE.

Bournemouth.—St. Swithin's Church, Manor Road: additions.

Convent of the Cross, Parkwood Road: laundry.

Royal Bath Hotel: additions.

"Beacon Royal," Beacon Road: alterations for the Bournemouth Residential Hotels Co., Ltd.

House, Seaward Avenue, for Mr. Gardner.

House, Southwood Avenue, for Mr. E. G. Evans.

House, Queen's Park Drive, for Messrs. J. & W. Hayward.

House, stabling, &c., corner of Castlemain and Kimberley Roads, for Mr. Pearce.

House, corner of Crabton Close and Wilfred Roads, for Mr. W. E. Bailey.

House, Edge Hill Road, for Mr. W. Rabbitts.

Pair of houses, Leap Hill Road, for Mr. C. Bartlett.

House, St. John's Road, for Mr. W. Wallis.

House, Stirling Road, for Messrs. J. & W. Hayward.

House, Talbot Hill Road, for Mr. D. Thornton.

House, Wick, for Messrs. W. Hoare & Sons.

Additions to "Pembroke Lodge," Belle Vue Road, for Mr. G. Meakin.

Additions to 25 Cleveland Rd., for Mr. W. Sheppard.

Additions to No. 302 Holdenhurst Road, for Messrs. Boots, Ltd.

Additions to "Egmore," Knyveton Road, for Major-General Galloway.

Additions to 116 Markham Rd., for Mr. G. H. Mason.

Additions to "Valrosa," York Road, for Mr. Bamber.

Additions to "Dunkeld," Wimborne Road, for Mr. Stewart.

Alterations to No. 129 Christchurch Road, for Mr. W. H. Hellier.

St. Peter's School House, St. Peter's Rd., additions.

Additions, Old Christchurch Road, for Messrs. Bright's, Ltd.

Workshop, rear of 19 Portman Rd., for Mr. H. Wall.

Workshop additions, Gladstone Road, for Mr. A. Barnes.

Petersfield.—Rectory. Messrs. Unsworth, F.R.I.B.A., Son & Triggs, architects. Messrs. Musselwhite & Sapp (of Basingstoke), contractors (£1,750).

Portsmouth.—All Saints' Church, Landport: restoration.

HEREFORDSHIRE.

Hereford.—Art School extension (£600).

Hereford (near).—Grafton Court Farm: farmhouse and additions and alterations to existing cottages. (Apply to Mr. B. Dear, County Land Agent.)

Ledbury.—Boys' Council School: improvement.

HERTFORDSHIRE.

Baldock.—Premises for Messrs. W. B. Moss & Sons: additions and alterations.

Haileybury.—College School (£13,500).

KENT.

Dover.—Two houses, Astley Avenue, for Mr. G. Munro.

House and shop, junction of Elms Vale Road and Eaton Road, for Mr. W. H. Grigg.

Guston.—Six cottages for the Eccles. Commissioners.

Maidstone.—No. 71 Bank Street: re-building for Mr. C. Mortimer.

Seren Oaks.—Lavatories and slipper baths. Council Surveyor.

LANCASHIRE.

Bolton.—Infirmary: King Edward VII. Memorial Nurses' Home. Messrs. Henderson & Brown, architects.

Chorley.—Council School, Duke Street, for 500 places.

Rochdale.—Council School, Newbold: alterations and extensions. Messrs. Sykes & Evans, architects.

LINCOLNSHIRE.

Lincoln.—"Blue Anchor" Hotel, High Street: alterations to outbuildings.

Two houses, Chelmsford Street, for Mrs. G. E. Mettam.

Four houses, Smith Street, for Mr. A. Ball.

Ten houses, Smith Street, for Mr. F. W. Horton.

Corn warehouse, Brayford Side North, for Messrs. Peel Bros.

Testing and packing shop, woodworks, Firth Road, for Messrs. Ruston, Proctor & Co., Ltd.

Surfleet.—Vicarage house.

MIDDLESEX.

Sunbury.—St. Mary's Schools: additions for 100 places.

NORTHAMPTONSHIRE.

Far Cotton.—Council School additions and improvements (£1,000).

Northampton.—Elementary School, St. James' End, for 1,200 places.

NORTHUMBERLAND.

Halwhistle.—Laundry for the South Tyne Laundry Co.

Wall End.—House for Mr. E. Joicey.

NOTTINGHAMSHIRE.

Huthwaite.—Carnegie Free Library (£2,000).

SHROPSHIRE.

Dawley Parva.—St. Luke's Sunday school (£550).

SOMERSET.

Bath.—Drill Hall for the Territorial Force Association.

Huish Episcopi.—Council School alterations (£1,900).

Portishead.—Council School (£2,650).

Stoke-sub-Hamdon.—Domestic subjects centre.

Wellington.—Manual training and domestic subjects centre, Courtland Road (£920).

Whitchurch.—Council School (£2,100).

STAFFORDSHIRE.

Stafford.—Ten houses, St. George's Road, for Mr. W. Barton.

New shops, for Messrs. Siemens Bros.' Dynamo Works, Ltd.

Stoke-on-Trent.—C. of E. School, Fenton: additions and alterations (£5,000).

Wolverhampton.—Council School (£12,400).

SUFFOLK.

Beccles.—Shops, showrooms, &c., for the Beccles Workingmen's Co-operative Association, Ltd. Mr. A. Pells, F.S.I., architect.

Ipswich.—New premises for Messrs. Fraser, Ltd. Mr. E. T. Johns, architect.

SURREY.

Addlestone.—Sixty-five cottages, Spinney Hill Estate.

Godalming.—Police Station additions (£1,500).

Hersham.—Public Elementary School for 500 places.

Woking.—Police Station (£2,100).

SUSSEX.

Brighton.—Aquarium alterations, with concert hall for 3,000 persons. Mr. Denman, A.R.I.B.A., architect.

Worthing.—Municipal buildings.

WORCESTERSHIRE.

Barnt Green.—Warwick Hall additions, for the Rev. J. G. Gilbert.

Beoley.—Beoley Hall: additions for Mr. W. A. Kennard.

House, Bean Hill, for Mr. F. Mawby.

Kempsey.—Parish Church restoration (£1,600).

YORKSHIRE.

Bradford.—Six houses, Amberley Street. Messrs. S. Jackson & Son, architects.
Sheffield.—Picture palace, Fargate.

WALES.

Cardiff.—Technical Institute, Cathays Park.
Denbigh.—Salem Wesleyan Chapel: alterations.
Onllwyn.—Pantydryn Hotel. Mr. T. E. Richards, A.R.I.B.A. (of Pontypridd), architect.
Ruthin.—"Glanrafon," Llanfwrog: conversion into two houses.
Swansea.—Graig School extension.

SCOTLAND.

Dunfermline.—Library extension (£11,000).
Edinburgh.—Church, Roxburgh Place, for Lady Glenorchy's Church Trustees.
 Deanbank Institution for girls: new building in Canaan Lane. Mr. D. M'Arthy, architect.
 Six continuous villas, Murrayfield Gardens, for the Murrayfield Real Estate Co., Ltd.
 Four blocks of flatted villas, Restalrig Gardens, for Mr. J. Hogg.
Glasgow.—Western Infirmary extension in re-constructing and enlarging the pathological section (£8,000 to £10,000).
 Offices, corner of St. Vincent and West Nile Streets, for the Phoenix Assurance Co., Ltd.
 Municipal Buildings: extension (£150,000).
 Re-construction of No. 137 Argyle Street for a picture house, for St. Enoch's Picture Theatre, Ltd., London.
 Two tenements of shops and houses, Pollokshaws Road. Mr. J. Wright, builder.
 Workshops and stores, Houston Place, for Scottish Co-operative Society, Ltd.
Kilmarnock.—Warehouse alteration, King Street and Sandbed Lane, for Messrs. Lauder & Co., Ltd. (£600).
Muirhead of Liff.—Board School. Messrs. Thoms & Wilkie, F.R.I.B.A. (of Dundee), architects.
Paisley.—Picture theatre, High Street and Cumberland Place. Accommodation for 950 people.

IRELAND.

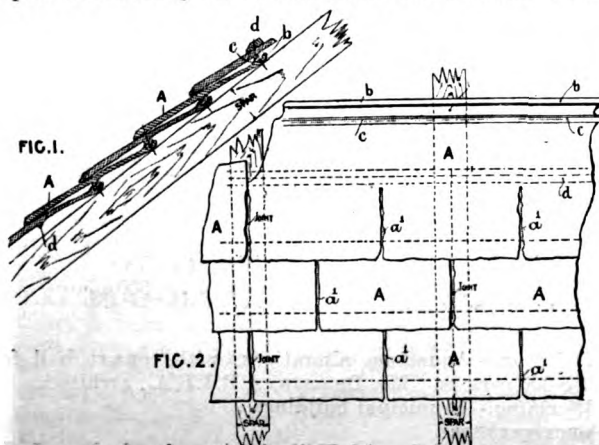
Clonakilty.—Two labourers' cottages, Ballinglanna.
Crookslin.—Sanatorium extension. Mr. G. Moore, C.E., architect.
Dublin.—South Dublin Union hospitals: extension for a nursing department; also additions and alterations.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 18,482. August 16, 1911.—Improved roofing tile or slab, E. A. Flower, Oxford Street, Manchester, architect. This invention relates to roofing tiles or slabs such as are made from compositions of asbestos or cement. It is designed to provide a roofing tile or slab from such materials which



will be artistic in appearance, material and labour saving, cheap in construction, and a more permanent and effective protection against weather in use. Fig. 1 is a transverse section of roof showing the slabs or tiles laid in position

thereon. Fig. 2 is a part plan of roof. The slabs or tiles A are preferably made from cement and a reinforcing member of wire mesh. Each slab or tile is made of such a size or length as to span the required distance between the centre of three or four spars of the roof of a building; that is, each slab is preferably to rest on three or four spars. The slabs are of any ordinary convenient width, and will be made of various thicknesses as may be required to imitate slates, ordinary clay tiles, or "stone slates." The slabs may be divided at intervals with cuts, notches, indents, ridges, or other marks, *a1*, to represent tiles or slates—or may be left plain, and the edges may be shaped to represent any ornamental shape to give any desired artistic appearance. Each slab is formed at its top edge with a longitudinal retaining rib or lip *b*, and an abutment rib *c* deeper than the lip *b* on the upper side, and with a projection or rib *d* on the under side, the latter abutting against the rib *c* of adjacent slab, thereby holding and aligning the tiles or slabs in position. When laying the slabs the first row is laid in position directly on the spars, battens transversely from spar to spar being dispensed with, and the succeeding row is laid thereon, the ribs *c* of the first row, against which the central under side ribs *d* of the succeeding row abut, serving in lieu of battens to retain the next row in position and alignment, and so on to the top of the roof. June 5, 1912.

PATENT SPECIFICATIONS PUBLISHED
JULY 4, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 13,693. June 8, 1911.—T. W. Twyford, of Cliffe Vale Potteries, Hanley. Flushing valves.

13,751. June 9, 1911.—E. J. Bull, district engineer, Chupra, Sarun district, Bengal. Hinges for door or window frames.

13,892. June 10, 1911.—Date claimed under International Convention June 11, 1910. La Soc. Courtard, G. Garnier Gil et Cie., 26 rue Boursault, Paris. Means for operating cocks, valves, and the like from a distance.

13,914. June 12, 1911.—William Cockburn, 10 Rosslyn Terrace, off Chester Road, Sunderland. A loose double moulding spindle head for wood working machines.

14,031. June 13, 1911.—Date claimed under International Convention Sept. 6, 1910. J. J. Smith, 988 Ogden Avenue, Bronx, New York. Stone cutting saws.

14,115. June 14, 1911.—F. W. Jennings, 12 Great James Street, Bedford Row, W.C. Control valves.

14,155. June 14, 1911.—W. H. Jarvis, 14 Nelson Road, Belvedere. Sash fasteners.

15,113. June 28, 1911.—William Chattaway, Mill Street, Great Bridge, Staffs. Means for manufacturing metal sections, such as floor plates, roof plates, and the like.

18,110. Aug. 10, 1911.—Thomas Bamforth and W. J. Rodgeron, Carron Co., Carron, Stirling. Hoisting machinery and the like.

18,160. Aug. 10, 1911.—B. J. Grigsby, 1a Rosebery Avenue, E.C. Reflector fittings for electric lamps.

18,568. Aug. 17, 1911.—W. M. Homan, 20 Renfrew Street, Glasgow. Sundials.

19,108. Aug. 25, 1911.—British Thomson-Houston Co., Ltd., 83 Cannon Street, E.C. Communication from the General Electric Co., of Schenectady, U.S. Electric heating devices.

20,219. Sept. 12, 1911.—T. H. Pyke, Coventry House, South Place, Finsbury, E.C. Artificial stone.

20,356. Sept. 14, 1911.—William Oates and F. P. Barber, Horley Green Works, Horley Green, Halifax. Water closet pedestals or basins.

20,753. Sept. 20, 1911.—William Bradley, 35 North Street, Bridgetown, Cannock, Staffs. Lift latch.

20,858. Sept. 21, 1911.—Allan Macpherson, Mansfield, Newmilns, Ayrshire, and John Macpherson, Mayville, Newmilns, Ayrshire. Apparatus for use in carburetting air.

21,161. Sept. 25, 1911.—Walter Pitt, Newarke Foundry, Bath. Cranes.

22,478. Oct. 12, 1911.—S. S. Wales, 3116 North Lyndale Avenue, Minneapolis, U.S. Closures for stove pipe openings.

23,523. Oct. 24, 1911.—William Goodwin, 36 Lime Street, E.C. Elevators.

27,174. Dec. 5, 1911.—S. R. Park, 15 Wiend, Wigan. Handles for spades, shovels, forks, and the like.

28,497. Dec. 18, 1911.—Walter Lucas, 822 Bay Street, Victoria, British Columbia. Joint for sewer and like pipes.

- 1,332. Jan. 17, 1912.—Wilhelm Mittelmann, Siegen, Westphalia, Germany. Insulating walls and ceilings.
- 1,816. Jan. 23, 1912.—F. M. Prockter, 6 Melrose Avenue, Brooklands, Cheshire. Joining or coupling of pipes.
- 2,538. June 13, 1911.—J. J. Smith, 988 Ogden Avenue, Bronx, New York, U.S. Stone cutting saws.
- 5,150. Feb. 29, 1912.—Julius Tiedemann, Behlendorf, near Ratzeburg, Germany. Drain pipes.
- 6,014. March 11, 1912.—Date claimed under International Convention March 9, 1911. F. G. Partington, Cœur d'Alene, Idaho, U.S. Public drinking fountains.
- 7,468. March 27, 1912.—V. W. Heydlauff, Havre, Chouteau County, Montana, U.S. Fire escapes.
- 7,803. April 1, 1912.—Robert Green, Roecliffe, near Boroughbridge, York. Roofing-tiles.
- 8,849. April 15, 1912.—Date claimed under International Convention May 20, 1911. Aktien Brown, Boverie & Cie., Baden, Switzerland. Brakes in connection with hoisting gear.
- 11,375. May 11, 1911.—J. H. Hopkins, 38 Cooke Street, Old Trafford, Manchester, and A. M. Stansfield, 31 Broom Lane, Levenshulme, Manchester. Carburetted apparatus.

NOTTINGHAM ARCHITECTURAL SOCIETY.

THE "profession" were favoured with fine weather for their visit to Cheshire on Thursday of last week. The party of twenty-four members and friends included the President, Mr. E. R. Sutton, the Vice-President, Mr. H. Gill, Messrs. W. V. Betts, R. Evans, F. W. Gregory, W. R. Gleave, E. H. and A. E. Heazell, Arthur Marshall, W. Pare, A. W. Shelton, and the Hon. Secretary, F. M. Royle.

Moreton Old Hall was the first place visited. This is one of the few remaining half-timbered manor houses of the Tudor period. The oldest portion dates back to 1207, but the greater portion of the building was erected some 300 years later. Situated in the midst of verdant meadows, with its projecting upper storeys and quaint windows, gabled roofs and ivy-clad chimneys and the stone bridge spanning the moat, it is the delight of artists and photographers from all over the world. The interior, with carved oak beams, panelled ceilings, walls, and massive carved fireplaces, is no less interesting, and the old furniture in the rooms is most carefully preserved. Services are still held four times a year in the tiny private chapel.

This old mansion is greatly prized and cared for by the present caretaker, Mrs. Dale, one of whose ancestors has recorded in quaint lettering over one of the windows:—

Rycharde x Dale x carpenter x made x thies x by x the x grac x of x God.

Miss Moreton, the last of the Moreton family, died recently at the age of ninety-two, and the property now passes to Bishop Abraham, of Derby.

Astbury Church was then inspected. The earliest portion of this dates back to the thirteenth century. Among many interesting features is a priest's chamber over the south porch, with a small stone window looking from it into the church. The altar rail, font cover, rood screen, and pew doors are fine examples of Jacobean carved oak work. Astbury was originally the parish church of Congleton. A pew is still reserved for the Mayor and Corporation of this latter town, and they keep up their connection with the church by paying it an annual State visit.

Lunch was taken at the quaint old Lion and Swan Hotel at Congleton, which dates back to the sixteenth century, and is filled with a unique collection of antique furniture, pottery, pewter, and brass work collected by the present proprietor.

The church at Marton was the next call. This is a pretty half-timbered church and tower dating back to the fourteenth century. Through the courtesy of the vicar, the earliest register on vellum, dating from 1558, was seen.

Siddington Church was also visited. This is a similar example of black and white construction, of which the chancel, porch, and roof of the nave are the original fifteenth-century work.

The last church inspected was Gawsorth, a stone building dating back to 1400 or earlier, and containing many beautiful alabaster monuments of the Fytton family. A long pond stretching in front, covered with water lilies, and a quaint old half-timbered rectory facing the church, make the situation an ideal one.

Although the distance covered was nearly fifty miles, the motor-cars brought the party back to Stoke in time to take dinner previous to returning home.

HAMPSHIRE AND ISLE OF WIGHT ASSOCIATION OF ARCHITECTS.

A GENERAL meeting of the above Society was held at 45 Jewry Street, Winchester, last week. Sir William Portal, Bart., F.S.A., President, was in the chair. Representatives from Portsmouth, Southampton, and Bournemouth were present. After a list of candidates had been brought forward and voted upon (four new members being admitted), the draft rules, temporarily adopted on the formation of the Association last March, were re-considered in detail, and finally adopted with a few alterations.

A Council of Management was formed consisting of the President, the Vice-President (Mr. N. C. H. Nisbett), the Hon. Secretary and Treasurer (Mr. R. M. Lucas), the Assistant Hon. Secretary (Mr. Ingalt Sanders), and four Fellows of the Association—namely, Mr. R. F. Chisholm (Portsmouth), Mr. H. L. G. Hill (Winchester), Mr. G. A. Bligh Livesay (Bournemouth), and Mr. Percy G. Stone (Isle of Wight). The Council will arrange a series of meetings to take place at various towns during the winter months. Gentlemen living in Hampshire and the Isle of Wight who are interested in architecture are invited to join the Association, and to communicate with the Hon. Secretaries, Bargate Chambers, Southampton.

GERMAN TOWN PLANNING TOUR IN ENGLAND.

THE Garden Cities and Town Planning Association, of 3 Gray's Inn Place, W.C., are arranging for another visit of members of German municipalities to inspect English garden city and housing schemes, under the guidance of Mr. Culpin, the Secretary.

The party, about 100 strong, will arrive in England on August 18, and the next fortnight will be spent in visits to practically every housing scheme of importance in the country.

Among other places which will be seen are the garden villages of Hull, Earswick, Port Sunlight, Bournville and Knebworth, the garden suburbs of Wavertree (Liverpool), Harborne (Birmingham), Hampstead, Ealing, Ilford, &c., while special interest will be taken in the garden city at Letchworth, where more nearly than any other place in this country the question has been solved of the provision of labourers' dwellings at an economic rate.

Municipal housing will be studied in the various towns visited, and the estates of the London County Council will be visited.

Among the party are some of the prominent town planners and architects of Germany and Austria, while the town of Riga sends a number of officers to investigate.

The visit affords an excellent opportunity for town planners in England to rub shoulders with those who have actually done such work in Germany, and any students and others who would like to join the party at any point, or to meet at their social gatherings, are invited to communicate with Mr. Culpin at the above address.

SHOT FIRING IN MINES AND QUARRIES.

SHOT firing in mines and quarries and in excavation work on a large scale is one of the worst enemies to employers. Despite very stringent regulations there were last year no less than thirty-eight deaths and five hundred and three more or less serious accidents through misfiring. Needless to say, there have been many efforts made to render such mishaps impossible, or at least to minimise the risks. The latest of these were made the object of a demonstration at the Westminster Palace Hotel, London, S.W., on the 4th inst., at which Sir Alfred Mond, Bart., M.P., took the chair.

The "P.P. Safety Shot Firing Appliances" are the patent device of two South Wales colliery employes. It is boldly claimed that the appliances render it impossible that any accident should come about through misfiring, and, moreover, minimises the liability to misfire, with its consequent delay. Any slightly increased cost would obviously be quickly recouped if the operation could be always carried out with perfect safety. The apparatus consists of a detonator shield made of copper, enclosing the detonator and giving protection against friction or rough handling. The detonator wires are attached to the base of the shield in a convenient manner, and in such a way that any tension is taken up by the shield. The wires cannot be separated from the detonator by the use of the shield, and by adopting a special method of stemming the shot hole it is possible to withdraw an unexploded detonator and reinsert a fresh one with perfect safety.

The inserting appliances consist of an external graduated copper tube and an internal copper rod with loose spike. The mode of operation is as follows:—

The base of the primer is opened up with the copper spike to a convenient depth for accommodating the detonator and shield. The detonator and shield are then passed through the tube by means of a copper rod, and inserted into the primer. They are then placed in position in the shot hole, and the hole is stemmed, a semi-circular rammer being used. The balls of stemming used are made on a former. The abrasion of the detonator wires, which is the most prolific cause of the misfires, cannot occur. When the stemming has reached four inches or six inches from the mouth of the hole the copper tube is withdrawn, and the mouth of the hole completely stemmed.

The shot is then fired in the usual way. Should a misfire occur the detonator and shield can immediately be withdrawn by hauling on the electric cables. By the withdrawal of the detonator all danger is removed, and the hole can be approached.

It is claimed for the invention that by its agency the dangerous and costly process of drilling another hole alongside in case of misfire is entirely done away with. No time is lost in searching for unexploded detonators, with its attendant dangers; and, further, by the adoption of the system, it is impossible for any person other than the appointed shot-firer for the district in the mine to charge or stem a shot hole.

TRADE NOTES.

WILLIAM POTTS & SONS, LTD., of Leeds, have received instructions to make and fix a clock in the Hartshead-cum-Clifton Church, Yorks. The clock will have all the recent improvements, including Lord Grimthorpe's double three-legged gravity escapement and compensation pendulum.

MESSRS. CARTER & CO., LTD., the well-known tile manufacturers, of Poole, recently called a meeting of their employees regarding the Insurance Act, when Mr. Charles Carter, who presided, informed the employees that it was the intention of the directors to pay the employees' contribution as well as the employers'. The announcement was received with much gratification.

PALMER'S Travelling Cradle and Scaffold Company inform us that on and after Monday, June 24, the business carried on at 250 Westminster Bridge Road, S.E., will be transferred to their new extensive premises, Victoria Works, 112 Belvedere Road, London, S.E., to which address all communications should be sent. The Company's telegraphic address and telephone number will remain as before—viz. telegraphic address, Wireway, London; telephone number, Hop 1156.

THE imitation stone "Ferrocon" front and fibrous plaster and decorative work for the new Grand Theatre, Pentre, Rhondda Valley (Messrs. Willis & Cromie, architects), has been placed with Messrs. John Tanner & Son, fibrous plaster specialists, of 45 Horseferry Road, S.W., and 3 and 5 Gill Street, Liverpool; also the whole of the fibrous plaster and decorative work for the new Hippodrome, Aldershot (Mr. Bertie Crewe, architect).

MESSRS. E. H. SHORLAND & BROTHER, LTD., of Failsworth, Manchester, have in hand the following contracts:—The extensions to the Royal Infirmary, Bristol, and the new infirmary, Luton, are being supplied with Shorland's double-fronted patent Manchester stoves in faience and with descending smoke flues; the Council schools, Bont, and the Council schools, Athey Street, Macclesfield, are being supplied with Shorland's warm air ventilating patent Manchester grates; the Clydach-on-Tawe Mission Church is being ventilated by means of Shorland's patent concealed extract ventilators and hygienic inlet ventilating panels, and the new isolation hospital, Earlestown, is being supplied with Shorland's double-fronted patent Manchester stoves and patent Manchester grates.

A POWERFUL motor fire engine has just been added to the equipment of the Norwich Fire Brigade. It is of the Merryweather petrol "Hatfield" design, with reciprocating pump capable of delivering 500 gallons per minute and upwards. It also carries a detachable fire escape to reach 50 ft., as well as 2,000 ft. of hose, and affords accommodation for a dozen firemen. The "Hatfield" type was chosen by the City Engineer after he had fully investigated the merits of several other kinds of motor pumps. It is to be hoped that the time is not very far distant when all cathedral cities will be equipped with motor fire engines which can turn out instantly and travel at a speed of over 30 miles an hour.

MR. F. J. BARNES, the Portland Stone Quarries, steam saw mills, masonry and turning works, Portland, Dorset, informs us that he supplied the whole of the Portland stone used on the large new premises at the corner of Oxford Circus, W. (Mr. Henry Tanner, jun., architect). This building was illustrated by us last week. The whole of the stone was worked at Portland and fixed and cleaned by Mr. Barnes' men. A record was created, it is stated, by the speed with which the contract was carried out. Mr. F. J. Barnes informs us that he has supplied or been ordered to supply the whole of the Portland stone used in the following London buildings:—Board of Agriculture and Fisheries (new offices), 40-43 Fleet Street, Imperial College of Science, Woolwich Footway Tunnel; Carlton Theatre (Cinema), Tottenham Court Road; L. C. & W. Bank, High Road, Balham; 3 & 4 Vere Street; 103-109 Wardour Street; 146 & 147 Houndsditch; 191 Wardour Street. Among his recent jobs in the country are the following:—Halstead Bridge; Devonport P.O.; Harbour Commissioners' Offices, Blyth; Lloyds Bank, Manchester; Savings Bank, Stockport; Lancing College; Brockwood Park, West Meon; Adelphi Hotel, Liverpool; King's College Chapel, Cambridge; Crawley Rectory.

VARIETIES.

AN interesting event took place on Tuesday evening last, when Mr. R. A. Briggs entertained at dinner Mr. Herbert Batsford, Mr. Harry Batsford, Mr. Harry Browning (Mr. Briggs's partner), and several of the oldest members of Mr. Batsford's staff to celebrate the twenty-first anniversary of the publication of his "Bungalows and Country Residences."

AN exhibition of work done by students in the Architectural Department of the University of London during the past session will be held in the Science Library, University College, Gower Street, between 9 A.M. and 6 P.M. from July 13 to July 20, both days inclusive.

PROFESSOR C. A. M. SMITH, of East London College (London University) and late of Birmingham, has been appointed Professor of Engineering at the new University of Hong Kong. Professor Smith, it may be remembered, recently contributed to our columns a series of illustrated articles on "Petrol Air Gas," and which have now been brought together in booklet form.

THE twelfth century parish church at Sherburn was dedicated on the 8th inst. after restoration work involving an outlay of £30,000 on the part of Sir Henry Tatton Sykes. Messrs. J. Thompson & Sons, Peterborough, were the contractors, the late Mr. Hodgson Fowler and Mr. W. Brierley, of York, being the architects, whilst Mr. Milburn, of York, executed the fine sculpture work which adorns the exterior.

THE Wallasey Town Council last week considered a recommendation that the plans of Messrs. Briggs & Thornely, architects, be approved with respect to the proposed Town Hall at North Meade. The scheme is estimated to cost £96,500. In the course of the discussion it was pointed out that there was a previous resolution of the Council standing in which the cost had been placed at £80,000. The motion was accordingly out of order, and will be again considered at the August meeting.

THE Building Acts Committee of the London County Council recommend that the Council, in the exercise of its powers under section 41 of the London Building Act, 1894, consent to the re-erection of buildings abutting upon Norfolk Street, Green Street, Park Street, and Wood's Mews, Mayfair, as shown on the plans submitted with the application of Mr. E. Wimperis, on behalf of the Grosvenor Estate. Consent is subject to the condition that the whole of the buildings be completed, and the "common garden" shown on the plan formed within four years from July 9, 1912.

THE London County Council recently invited from firms of surveyors on their list tenders for the work of taking out the quantities, measuring extras and omissions, and supplying valuations for certificates for the proposed eleventh asylum. Eight offers were received, and representatives of the firms who submitted the four lowest tenders, viz., Mr. Herbert Robinson, Messrs. W. H. & P. B. Strudwick, Messrs. Northcroft, Neighbour & Nicholson, and Messrs. C. J. Mann & Son, have been interviewed. After full consideration the Asylums Committee decided to accept the third lowest tender, that of Messrs. Northcroft, Neighbour & Nicholson, the approximate total of which is £2,282. The expenditure will be a charge against the capital vote of £517,970 for the erection and equipment of the eleventh asylum.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Oct. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARDIFF.—Aug. 6.—The Corporation invite designs and estimates in competition for a fire brigade station proposed to be erected in Westgate Street, Cardiff. The Corporation have appointed Mr. A. Marshall Mackenzie, architect, to act as assessor. The deposit of £2 2s. will be returned to all architects submitting bona-fide designs or who return the conditions within six weeks. Full particulars of the competition will be sent to the architects on application to Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

(Continued on page 7.)

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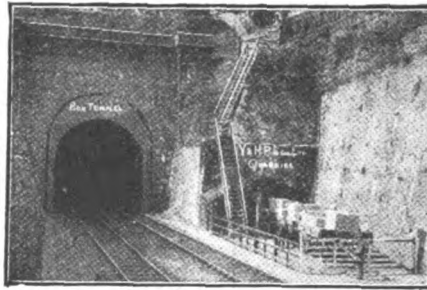
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CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

GLASGOW.—The Corporation of the City of Glasgow invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

CONTRACTS OPEN.

ACKWORTH MOOR TOP.—Aug. 3.—For the whole of the works in the erection of stationmaster's house, four cottages, tranship shed, and weigh offices, for the Brackenhill Light Railway. The Resident Engineer, Ackworth Moor Top, Yorks., or Mr. William Bell, architect, York.

ARMLEY.—July 30.—For the whole or any portion of the works required to be executed in the erection of United Methodist Church school, &c., at Colton Road. Send applications at once to Mr. J. Auty, A.R.I.B.A., architect, Peel Street, Morley.

AXMINSTER.—July 25.—For alterations, additions, and repairs to property at Axminster to be used as infantry quarters for the Territorial Force Association of the County of Devon. Messrs. Ellis, Son & Bowden, F.S.I., architects and surveyors, Bedford Chambers, Exeter.

BELPER.—July 24.—For the erection of goods shed and offices in brick for the Midland Railway Co. The Engineer's Office, Derby Station.

BIRMINGHAM.—Aug. 26.—For the erection of buildings in further extension of the Council House (Second Extension Contract). Send in application and £5 5s. deposit by July 31 to Messrs. H. V. Ashley & Winton Newman, architects, 14 Gray's Inn Square, London, W.C. (See advertisement.)

BISHOP'S CASTLE.—Aug. 1.—For the following work at Bishop's Castle Workhouse:—Contract 1: Alterations in laundry, including louver ventilator, new windows, gulleys, repairing seven chimney tops. Contract 2: Alterations in wash-house, including steam exhaust dome, repairing arch, protecting pipes, &c., from frost, stop taps. Mr. P. H. Newill, clerk, Clun Union, Bishop's Castle.

BLACKADON.—July 29.—For alterations and additions to the farm buildings at the Plymouth Borough Asylum at Blackadon, Ivybridge. Mr. E. Priestley Shires, F.R.I.B.A., architect, 21 Lockyer Street, Plymouth.

BRADFORD.—July 30.—For the several trades required in erection of a test workhouse at Daisy Hill. Deposit £1 1s. Mr. F. Holland, architect to the Board, 22 Manor Row, Bradford.

BURY.—For various works required in erection of shop and dwelling-house in Bolton Road, for the Bury District Co-operative Society, Ltd. Mr. D. Hardman, architect, Agur Street, Bury, Lancs.

CASTLE CARY.—July 30.—For erection of a drill hall, sergeant instructor's cottage, and miniature rifle range at Castle Cary, Somerset, for the Territorial Force Association. Deposit £1 1s. The Armoury, Castle Cary, or Mr. A. J. Pictor, A.R.I.B.A., Bruton.

CASTLE EDEN.—July 31.—For the whole of the labour and material required in the erection of engine houses and heapstead at Blackhall Colliery, for the Horden Collieries, Ltd. Mr. J. Hamilton, architect and surveyor, Horden Collieries, Ltd., Castle Eden.

CHEADLE.—July 27.—For the erection and completion of a new Council School to accommodate 320 children at Cheadle (near Stoke-on-Trent). Send applications and £1 1s. deposit by July 27 to Mr. Graham Balfour, Director of Education, County Offices, Stafford.

CHESTERFIELD.—July 24.—For erection of a new lock-up, courthouse, and deputy chief constable's residence, &c., in Tipton Road and Malkin Street, for the Derbyshire Standing Joint Committee. Deposit £2 2s. Messrs. Hunter & Woodhouse, architects, Belper, Derbyshire.

CHESTERTON.—July 22.—For erection of a laundry at the workhouse. Mr. J. F. Symonds, clerk, 9 Bene't Street, Cambridge.

CLITHEROE.—July 27.—For painting, decorating, rough casting, and ventilating, &c., at the town hall, free library, and municipal offices. Mr. A. R. Bleazard, borough engineer.

COVENTRY.—July 26.—For the erection of additions to St. Nicholas's Church, Radford. Mr. H. W. Chattaway, architect, Trinity Churchyard, Coventry.

DARTFORD.—July 24.—The Metropolitan Asylums Board invite tenders for constructing a glazed roof over workshops' yard at Darenth Industrial Colony, Dartford, Kent. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief. The office of the Board, Embankment, E.C.

DEVON.—July 24.—For the following work at Council schools: Combe Martin (infants'), ventilation; Drewsteignton, alterations; Newton St. Cyres, alterations, new cloak-rooms, and offices; Tavistock (boys'), alterations, for the Devon County Education Committee. The Architect's Office, 1 Richmond Road, Exeter.

DUDLEY HILL.—July 24.—For the various works (painters' excepted) required in alterations and additions to premises at Dudley Hill, for the City of Bradford Co-operative Society, Ltd. Mr. W. Rycroft, architect, Bank Buildings, Manchester Road, Bradford.

EDINBURGH.—July 23.—The Commissioners of H.M. Works and Public Buildings invite tenders for the reconstruction of the lavatories at the General Register House, Edinburgh. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. H.M. Works, 3 Parliament Square, Edinburgh.

EDINBURGH.—July 24.—For alterations on retaining wall at Regent Road Park, Abbeymount. Mr. J. A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, Edinburgh.

FERRYHILL.—For building shoemakers' workshop and cartshed at Ferryhill branch store, for the Coxhoe Co-operative Society. Mr. C. Stokoe, secretary, Coxhoe, Durham.

GOOLE.—July 27.—For pulling down the wooden structure inside the market hall, for the Urban District Council. The whole of the material to be removed from the site and to become the property of the contractor. The Surveyor to the Council, Goole, Yorkshire.

HALIFAX.—July 30.—For the various works required in structural alterations to the Bradford District Bank, Ltd., new premises in Commercial Street and Cheapside. Messrs. R. Horsfall & Son, architects, 22A Commercial Street, Halifax.

HAYWARD'S HEATH.—July 26.—For certain alterations and additions to female ward No. 6, and for fencing shelter walls and other work to the airing courts at the Brighton County Borough Asylum. Deposit £2 2s. Mr. J. G. Gibbins, F.R.I.B.A., 43 Brunswick Road, Hove.

HEREFORD.—July 22.—For alterations to the Herefordshire General Hospital. The Secretary's office at the hospital, or Messrs. Nicholson & Clarke, architects and surveyors, Cathedral Chambers, Hereford.

HUDDERSFIELD.—July 22.—For the erection of a branch store at Salendine Nook, for the Huddersfield Industrial Society, Ltd. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

HUDDERSFIELD.—July 26.—For the various trades required in erection of additions to the Hillhouse Congregational Sunday school. Messrs. Stocks & Sykes, architects, St. Peter Street, Huddersfield.

IRELAND.—July 27.—For the extension of buildings at their electricity works, South Lotts Road, for the Pembroke Urban District Council. Deposit 10s. The Clerk, Town Hall, Ballsbridge, County Dublin.

IRELAND.—July 27.—For building a vested National school at Mullaghduh, Islandmagee, County Antrim. Mr. J. A. Duff, general merchant, Loughford, Islandmagee.

KEIGHLEY.—July 22.—For work in connection with new gateway and alterations at Highfield school and new ashes places, &c., at Holycroft schools, for the Corporation. The Borough Engineer, Town Hall, Keighley.

LEICESTER.—July 23.—For erection of an additional car shed and for other works at the main car dépôt, Abbey Park Road, for the Corporation. Deposit £2. Mr. E. G. Mawbey, M.I.C.E., borough engineer, Town Hall, Leicester.

LINTHWAITE.—July 23.—For the various works required in erection of four dwelling-houses, Royds Lane, off Manchester Road. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

LIVERPOOL.—July 24.—The Guardians of the West Derby Union invite tenders from local firms for additions and alterations to Mill Road Infirmary, Mill Road. Deposit £5 5s. Mr. C. H. Lancaster, architect, Brougham Terrace, West Derby Road, Liverpool.

LONDON.—July 23.—For the erection of dwarf walling and iron railings at the home for aged poor, Elder Road, West Norwood, S.E., for the Lambeth Board of Guardians. Deposit £2. Mr. James L. Goldspink, clerk to the Guardians, Guardians' Board Room and Offices, Brook Street, Kennington Road, S.E.

LONDON.—July 24.—The Metropolitan Asylums Board invite tenders for providing and fitting up of bed-pan and other sinks at the North-Western Fever Hospital, Lawn Road, Hampstead. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, the office of the Board, Embankment, E.C.

LONDON.—July 25.—For the erection of steel framing and zinc flats to second-floor sunning balconies at the St. James's Infirmary, Ouseley Road, Balham, S.W., for the Guardians of Wandsworth Union. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

LONDON.—July 31.—For the erection, construction, and completion of sanitary conveniences and urinals, &c., at the Electricity Works, Fulham Palace Road, W., for the Hammersmith Borough Council. Mr. H. Mair, borough surveyor, Town Hall, Hammersmith, W.

MANCHESTER.—July 23.—For conveniences and waiting-room, Clowes Street, West Gorton; shelter at Stevenson Square; conveniences and shelter, Moston Lane; alterations to Brooks's Bar tram office, for the Corporation. The City Architect, Town Hall.

MANCHESTER.—July 24.—For altering stables and forming a covered yard for motor ambulances, &c., at the workhouse in New Bridge Street. Deposit 10s. 6d. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

MANCHESTER.—July 24.—For plastering four wards at the workhouse infirmary at Crumpsall. Deposit 10s. 6d. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

MARSDEN.—July 25.—For the various works required in erection of two shops and houses, Peel Street. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

NORTH DALTON.—July 29.—For the erection and completion of two workmen's houses, for the Sunderland and South Shields Water Company at their North Dalton pumping station, near Murton. Deposit £2 2s. Mr. Alfred B. E. Blackburn, A.M.Inst.C.E., 29 John Street, Sunderland.

NORTHWICH.—Aug. 14.—For the erection of public baths and washhouses. Send applications and £2 2s. deposit by July 29 to Mr. J. A. Cowley, clerk, Council Offices, Northwich.

ORSETT.—July 22.—For alteration and addition to the Union offices; also for installing a heating apparatus. Mr. C. M. Shiner, A.R.I.B.A., architect, 7 Adam Street, Adelphi, W.C., and The Gate House, Grays, Essex.

PORTSMOUTH.—July 26.—For constructing and completing a store and mess room, &c., at the Baffins refuse destructor within the borough, and keeping the whole of the work in repair for six months. The Borough Engineer's Office, Town Hall, Portsmouth.

RAINHILL.—July 25.—For the erection of two cottages at the County Asylum. The Engineer's Office, Rainhill Asylum, Lancashire.

ROCHESTER.—July 22.—For the execution of summer repairs and laying in water supply required to be carried out at the All Hallows Council School. Mr. T. Clibbon, correspondent, 42 High Street, Rochester, Kent.

ROOSE.—July 24.—For an extension of the workhouse at Roose, for the Barrow-in-Furness Guardians. Mr. H. T. Fowler, A.R.I.B.A., Cornwallis Street, Barrow-in-Furness.

SALISBURY.—July 30.—For new oak sashes at the Council chamber. Mr. W. J. Goodwin, A.M.I.C.E., city engineer and surveyor, Municipal Offices, Salisbury.

SALTAIRE.—For the erection of engineering works at Saltaire, W. Yorks. Send names to Mr. T. H. Gamble, architect, Bond Street, Bradford.

SCOTLAND.—For the mason, joiner, plumber, plaster, slater, glazier, and painter works of new school at Muirhead of Liff, for the Liff, Benvie, and Invergowie School Board. Messrs. Thoms & Wilkie, F.F.R.I.B.A., 46 Reform Street, Dundee.

SCOTLAND.—For the mason, carpenter, plaster, painter, and ironwork in reconstructing the picturedrome, Lossie Wynd. Mr. R. B. Pratt, architect, Elgin.

SCOTLAND.—For the mason, carpenter, slater, lath and plaster, plumber, painter and glazier works of new technical department and additions to the higher department at Portree public school. Messrs. R. J. Macbeth & Co., architects, Queen's House, Inverness.

SCOTLAND.—For the mason, joiner, plumber, slater, and plaster works, and machinery in connection with proposed alterations and additions to laundry buildings at east poorhouse, Dundee. Mr. T. Martin Cappon, F.R.I.B.A., 32 Bank Street, Dundee.

SHEFFIELD.—July 26.—For the building extensions required in connection with the electric power station, Club Mill Lane, Neepsend. Deposit £5 5s. Mr. S. E. Fedden, general manager and engineer, Commercial Street, Sheffield.

SILSDEN.—Aug. 9.—For the builder, joiner, slater, plumber, plasterer, painter, ironfounder, and smith and asphalt work at Silsden new school, for the West Riding Education Committee. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Skipton. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

SOUTHALL.—For the erection of bakery and stables at Southall, Middlesex, for the West London Co-operative Society, Ltd. Send names and £2 2s. deposit to the Architect's Department, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

STRATFIELD MORTIMER.—July 29.—For construction of waterworks in the parish of Stratfield Mortimer, Berks., consisting of water mains, engine house, and water tower, for the Bradfield Rural District Council. Send applications and £5 deposit by July 22 to Mr. H. Howard Humphreys, consulting engineer, 28 Victoria Street, Westminster, S.W.

THATTO HEATH.—July 31.—For the erection and completion of a public library, together with all contingent works, situate at the south-west corner of Thatto Heath Park, near St. Helens. Mr. A. W. Bradley, M.I.C.E., borough engineer, Town Hall, St. Helens.

TRURO.—July 22.—For the erection of a new addition to No. 4 Devonshire Terrace. Mr. Alfred J. Cornelius, M.S.A., architect, Truro.

WALES.—For alterations and additions to the Rose and Crown public-house, Goodwick. Deposit £1 1s. Mr. Hugh J. P. Thomas, architect, 9 Victoria Place, Haverfordwest.

WALES.—For alterations and improvements at the Verwick Council School, Cardigan, for the County Education Committee. Mr. G. D. Lewis, County architect, Aberystwyth.

WALES.—July 22.—For the following works, for the Glamorgan County Council—viz.: (1) New school at Bettws, near Bridgend; (2) alterations and additions to Bedling boys' school; (3) alterations and additions to Blaengarw girls' and infants' school; (4) cookery room at Newtown school; (5) water tank at Cowbridge County School; (6) additions to Bargoed girls' school; (7) alterations to offices at Troedyrhiwfwch school; (8) alterations to offices at Resolven school; (9) alterations to offices at Gowerton girls' and infants' school; (10) alterations to offices at Blaenllynfi school; (11) alterations to offices at Nantyllyn boys', girls', and infants' schools; (12) painting at the following schools: Gowerton boys, Waunarlwydd, Pontardulais boys' and girls' Ynistawe, Gwauncaegurwen (house only), Tyne-

wydd, Gwaelodygarth, Llandaff, Pontypridd intermediate, Llest (Pontrhyll), and Van mixed (Caerphilly). Mr. T. Mansel Franklen, clerk of the County Council, Glamorgan County Council Offices, Westgate Street, Cardiff.

WALES.—July 23.—For erection of new Council School at Menai Bridge, for the Anglesea Education Committee. Send names by July 23 to Mr. J. Owen, F.R.I.B.A., county architect, Menai Bridge.

WALES.—July 24.—For certain reparative works to their institution at Quakers' Yard, Merthyr Tydfil, for the committee of the South Wales and Monmouthshire Truant School. The Truant School, or Mr. William Dowdeswell, M.S.A., architect, Treharris.

WALES.—July 26.—For the reconstruction of mountain retaining wall at Coedcae Road, Trehafod, Glam., 20 feet below road level and 13 feet above, for the Urban District Council. Deposit £1 1s. The Council Offices, Pentre.

WALES.—July 29.—For the erection of twenty houses at Ystrad Mynach, for the Darran Building Club. Messrs. Seaborne & Cayley, architects and surveyors, Hengoed.

WALES.—July 29.—For taking down the Treharris Brewery buildings and erecting on the site thereof ten or more houses, for Messrs. The Model Building Co. Mr. W. Dowdeswell, M.S.A., architect, Treharris.

WALES.—July 31.—For the following works—viz.: Alterations and repairs (including extensive re-roofing) to stables, coach-house, garage, &c., at Clynfiew; recementing the exterior of mansion, including renewal of troughing, &c., at Clynfiew; construction of new reservoir and laying a new water main, with branches to stables, &c., at Clynfiew. Mr. T. E. Lewis Bowen, owner, Clynfiew, near Cardigan. Messrs. Morgan & Richardson, solicitors, Cardigan.

WALES.—July 31.—For works of improvements and alterations to the Llawryglyn Council School and out-offices, and for a proposed new water supply, for the Montgomeryshire Education Authority. Deposit £1 1s. The County Education Offices, Newtown.

WALES.—Aug. 3.—For the erection and completion of a new vestry at Bethesda, St. Dogmaels. Mr. J. Teifion J. Williams, architect, Napier Street, Cardigan.

WALES.—Aug. 7.—For rebuilding business premises in Rheola Street, Penrhiwceiber, for Messrs. the Penrhiwceiber Co-operative Society, Ltd. Deposit £2 2s. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

WALTHAMSTOW.—July 26.—For the supplying and fixing of the necessary steelwork, &c., in connection with the turbine gallery to be erected at the generating station, Priory Avenue, Hoe Street, Walthamstow; and also for other constructional steelwork in connection with an electricity generating sub-station to be erected within the district. Deposit £1 1s. Mr. G. W. Holmes, A.M.I.C.E., engineer to the Council, Town Hall Annexe, Walthamstow.

WOOLTON.—July 25.—For the erection of a shelter and public convenience at the south-east corner of the Lodes Pond, in Woolton, for the Much Woolton Urban District Council. Mr. C. H. Reilly, M.A., architect, Liberty Buildings, School Lane, Liverpool.

WORSTHORNE.—July 27.—For the concrete work, &c., in the repair of the sewage tanks at Brownside, for the Burnley Rural District Council. Deposit £3 3s. Mr. H. Pritchard, M.I.M. and C.E., engineer to the Council, Union Offices, Burnley.

WREXHAM.—For the erection of twenty-nine houses. Mr. F. A. Bevan, architect and surveyor, Wrexham.

A ROYAL PENCIL.

For over a hundred years Messrs. E. Wolff & Son, Ltd., London, have been making pencils. As the climax of a century's effort to improve their own productions they now offer the "Royal Sovereign" as the finest fourpenny pencil on the market. It is made by a new process of toughening the lead, which gives a point of great durability combined with ease of erasure. The lead is so tough that it will rarely snap if accidentally dropped on the floor, and so even is the grain of the wood that a new point is made in a moment.

The "Royal Sovereign" is a triumph in pencil-making, and a great credit to a famous old British firm, who have been pencil manufacturers to the British Government and the Bank of England for generations, and who are by special appointment makers to H.M. the King.

It is interesting to note that in 1564 it was Englishmen who invented the first pencil, and that to-day it is a British firm which claims to have produced the finest pencil in the world.

TENDERS.

CHERTSEY.

For the carrying out of the proposed surface water drainage scheme for Byfleet and Pyrford.

Bullen	£5,505	0	0
May & Sons	5,503	0	0
Osman & Co.	4,717	0	0
Warmington	4,158	0	0
Ripley, Strong & Co.	3,927	0	0
Hardy & Co.	3,650	0	0

FORTIS GREEN.

For construction of an engine and pump house, formation of roads, drainage, and other contingent works at Fortis Green, for the Metropolitan Water Board.

Airds, Ltd.	£6,533	12	7
C. Wall, Ltd.	6,303	6	10
Kirk & Randall	6,188	7	5
Strand Building Co.	6,142	7	3
CHESSUM & SONS, 7A South Place, E.C.			
(accepted)	5,684	14	11

LEEDS.

For the various works required in erection of villa residence off York Road. Mr. T. A. BUTTERY, L.R.I.B.A., architect, Leeds.

Accepted tenders.

Wain, Headingley, mason	£260	0	0
Fergusson, Leeds, joiner	219	18	4
Thompson, Leeds, plumber	95	0	0
Iredale & Son, Birstall, plasterers	88	10	0
Season, Leeds, tiler	47	19	0

LEEK.

For the erection of new offices and extension of the existing coal store, &c., at the Gas Works, Newcastle Road, for the Urban District Council. Mr. W. E. BEACHAM, C.E., surveyor to the Council, Leek.

Heath & Sons	£997	16	6
Grace	978	0	0
S. SALT, Leek (accepted)	900	0	0

LONDON.

For erection and equipment of the Cressy Road car shed, Hampstead, for the London County Council.

Patman & Fotheringham	£37,650	0	0
Holland & Hannen	37,350	0	0
Mowlem & Co.	36,819	0	0
Kirk & Randall	36,425	0	0
Lawrance & Sons	36,055	0	0
J. & C. Bowyer	35,232	0	0
Holloway Bros.	34,650	0	0
F. & H. F. Higgs	34,314	0	0
Rowley Bros.	33,675	0	0
KERRIDGE & SHAW, Cambridge (recommended)	32,722	0	0
Architect's estimate	33,114	0	0

For enlargement of the Paragon school, Bermondsey, by 240 places, for the London County Council.

F. & T. Thorne	£5,670	0	0
Smith & Son	5,625	0	0
Leng	5,589	0	0
Downs	5,523	0	0
Triggs & Co.	5,335	10	0
Parker & Son	5,300	0	0
Rice & Son	5,291	0	0
J. & C. Bowyer	4,867	0	0
HOLLIDAY & GREENWOOD, LTD., Brixton			
(recommended)	4,646	0	0
Architect's estimate	5,243	0	0

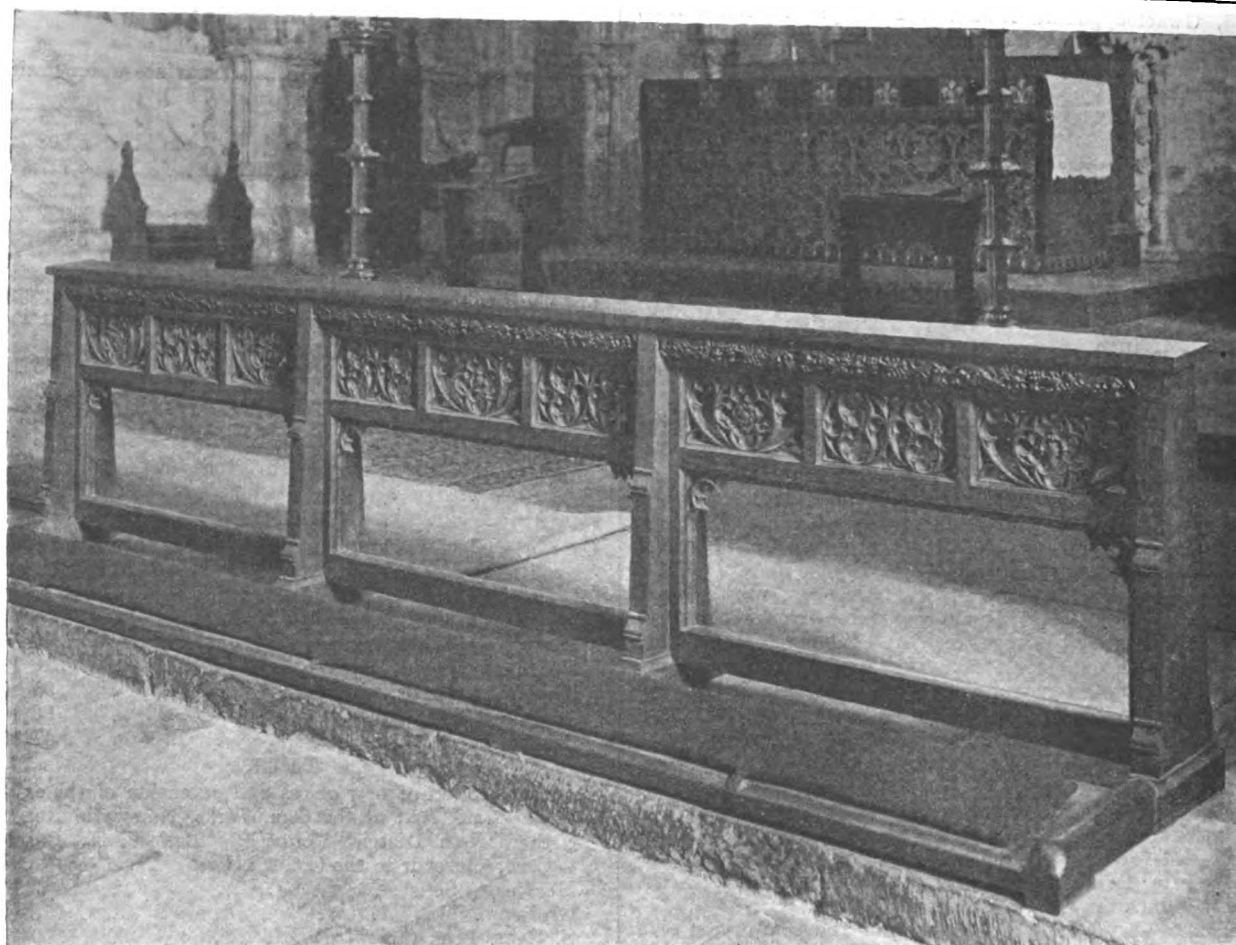
For electric lighting installation at Dulwich and Greenwich fire stations, for the London County Council.

Dulwich Fire Station.

Barker & Co.	£253	6	0
Harland Bowden & Co.	230	10	0
Tredegar & Co.	182	4	6
Tilley Bros.	169	0	0
CATHCART & Co., Salisbury Square, E.C.			
(recommended)	150	0	0
Chief engineer's estimate	172	0	0

Greenwich Fire Station.

Malcolm & Allan	£201	0	0
Stegmann & Co.	187	18	6
Fryer & Co.	176	2	0
Newbald & Co.	169	10	0
WESTON & SONS, 153 Fenchurch Street, E.C.			
(recommended)	145	0	0
Chief engineer's estimate	151	0	0



ALTAR RAILS, THE ANGEL CHOIR, LINCOLN CATHEDRAL.—Messrs. SCORER & GAMBLE, Architects.

SANDS.

For erection of a Primitive Methodist chapel, Sands, near High Wycombe Mr. A. W. NASH, architect, High Wycombe.

Clarke	£873	0	0
Gibson & Sons	860	0	0
Lane	849	0	0
Nash & Son	843	0	0
Nash	839	0	0
Jefferson	825	0	0
Dean	750	0	0
HARRIS & Co., Great Marlow (accepted)	715	0	0

SOUTHAMPTON.

For additions to Bitterne Schools. Messrs. WESTON & BURNETT, architects, Southampton.

Dyer & Sons	£950	0	0
Jenkins & Sons	935	0	0
Bagshaw & Son	933	0	0
Nichol & Co.	930	9	11
Franklin & Co.	924	7	0
Hale Bros.	918	0	0
Ings	914	8	8
A. Fry, Southampton (accepted)	913	0	0

WALES.

For erection of fifteen or more houses at Caerphilly, for the Llwyn-On Building Club. Mr. H. G. JONES, architect, Hengoed.

Price per house.

Benstow	199	10	0
Jones & Jones	182	0	0
Lewis & Son	182	0	0
Lloyd	178	10	0
Gilfraid	178	0	0
Arthur	177	8	0
Davies & Lewis	175	18	9
Thomas	173	5	0
Rosseter	170	0	0
LEWIS BROS., Gilfach Bargoed (accepted)	168	0	0

A RESIDENT in Scarborough has offered to provide the town with a motor fire engine and escape at a cost of 1,000 guineas. The offer has been gratefully accepted by the Town Council.

THE Birmingham Education Committee report that six new special schools for mentally defective children are needed in the following districts:—Anglesey Street, £5,500; King's Norton, £4,000; Reservoir Estate, Aston, £8,500; Greet, £4,000; Small Heath, £4,500; Mount Road, £4,000. The total cost is £30,500.

MR. R. M. LUCAS, F.R.I.B.A., Southampton, has prepared a revised design for the Pilgrim Fathers' Memorial proposed to be erected in Southampton Harbour at an estimated cost of £500. The design has been approved by the local committee, and will be proceeded with as early as possible.

A NEW body in the interests of pure water has been formed. It is called the Municipal Water Works Association, and it comprises members of town councils and other water authorities and also officials. The first president is to be Mr. Barnard, the chairman of the Metropolitan Water Trust, and the first vice-president Bailie Archibald Campbell, chairman of the Glasgow Water Committee.

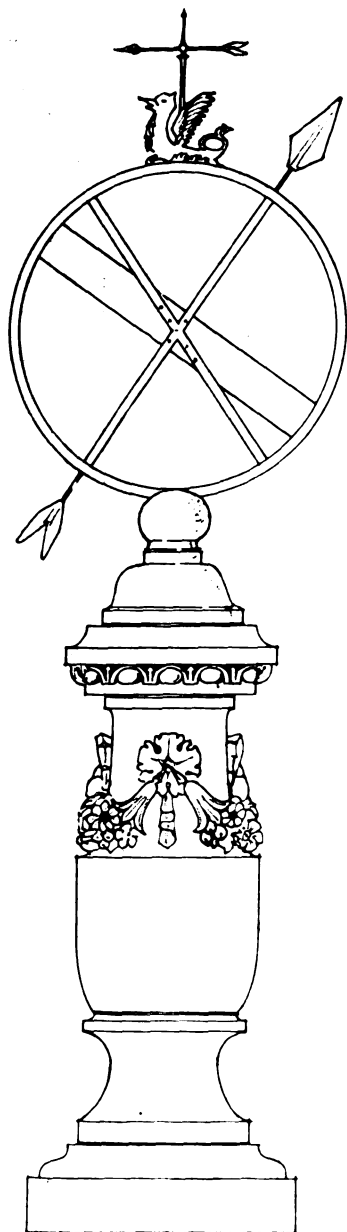
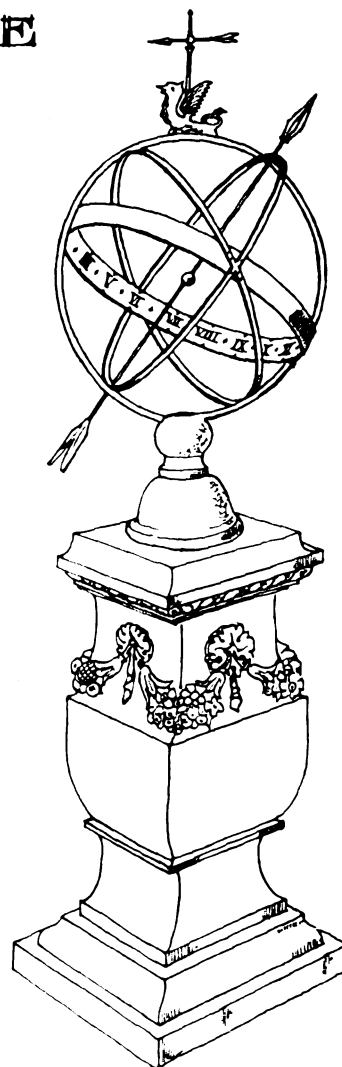
THE Bradford Corporation Tramways Committee are considering two schemes for the provision of a central tramcar depot. The alternatives are the rebuilding of the temporary depots at a cost of £22,408, and the building of a new central depot costing £46,500. The tramways manager recommends the latter scheme as the best and most economical arrangement, and suggests the acceptance of an offer of a site at Longlands.

EXTENSIVE improvements to the Widnes and Runcorn Transporter Bridge, estimated to cost £8,675, have been decided upon by the Widnes Town Council. The consulting engineer advised the alteration of the driving system from direct electrical to rope haulage. The weight of the car would be reduced from 90 to 60 tons, and greater permanence would be given to the entire structure and reliability to the running. A quicker service will be possible—probably a ten-minute service in place of the present twenty-minute.

THE "ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

MEASURED DRAWING OF ANTIQUE GLOBE SUNDIAL.

(REMOVED FROM MAIDENHEAD.)

PERSPECTIVE
SKETCH.THE PEDESTAL IS
PORTLAND STONE.

E. H. GIBSON. JUNE 1912.

THE sundial shown in the drawing is one that we rarely see—namely, the globe type of dial. It was brought from Maidenhead, and nothing is known of its history. The pedestal is Portland stone, and the dial is set on a base of rough angular blue rock-like substance, which one might suppose to be concrete covered with small blue granite chips. On the top of the dial is a weather vane. This sundial is now at a Harrogate curio shop.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BEDFORDSHIRE.

Bedford.—County Hospital additions.

CHESHIRE.

Birkenhead.—Town Hall, North Meade, Wallasey (£107,000).

CORNWALL.

Charlestown.—Vicarage (£1,000).*Truro*.—No. 4 Devonshire Terrace: additions. Mr. A. J. Cornelius, architect.

CUMBERLAND.

Penrith.—Secondary (Grammar) School.

DERBY.

Burton.—Church, Dale Road.*Chesterfield*.—Lock-up Court House, Residence, &c. Messrs. Hunter & Woodhouse (of Belper), architects.*Derby*.—Town Hall.

DEVON.

Newton Abbot and Torquay.—Secondary schools.

DURHAM.

Chopwell.—Drill Hall, for the Durham County Association Territorial Force. Messrs. Wright & Chapman (of Newcastle-on-Tyne), contractors.

ESSEX.

Felsted.—Church Tower restoration (£700). Mr. F. W. Chancellor, F.R.I.B.A. (of Chelmsford), architect.*Harwich*.—Salvation Army's Naval and Military Home (accommodation for 60 to 70).*Ilford*.—Society of Friends' Meeting House.*Leigh-on-Sea*.—Cottage, Eastwood Rd., for Mr. Warren. Four houses, Ronald Hill Grove, for Mr. B. S. Weston.

Two houses, Theobalds Road, for Mr. S. F. Johnson.

Manor Park.—R.C. Church.*St. Michael's*.—Mission church, Rutland Road.*White Roding*.—Council School: additions and alterations. Mr. Whitmore (of Chelmsford), County architect. House, Forest Road, for Mr. F. Bell.*Woodham Ferris*.—Parish school alterations. Messrs. C. & W. H. Pertwee (of Chelmsford), architects.

HAMPSHIRE.

Portsmouth.—Salvation Army Home for Soldiers and Sailors, Queen Street.

Trafalgar C. of E. Institute for Soldiers and Sailors: extension.

Southampton.—St. Mary's Church: tower and spire.

KENT.

- Chatham*.—Two houses, Dagmar Road, for Mr. Davies.
Twenty-two houses, Mount Road, for Mr. C. E. Skinner.
Additions and alterations at the rear of No. 190 High Street, for Mr. R. F. Brain.
Slaughter house, The Mount: rebuilding for Mr. T. J. Baker.
Tonbridge.—Cold storage and ice-making factory, Lime Hill Road, for Messrs. Ainslie, Adams & Co.
No. 2 Lonsdale Gardens: additions for Mr. W. B. Bacon.
House, Forest Road, for Mr. F. Bell.
Houses, Frant Road, for Messrs. Beale & Sons.
House, Plot 6, Rustwick, for Mr. J. Scrace.
Four houses, Stephen's and St. Luke's Roads, for Mr. T. Weaver.
School house additions, Culverden Down, for Rev. W. H. Parsons.

LINCOLNSHIRE.

- Skegness*.—Bakehouse additions, High Street, for the Co-operative Society.
Cottage Hospital, Dorothy Avenue.
Two pairs of villas, Drummond Road, for Mr. G. Peet.
Villa, Drummond Road, for Mrs. A. Shaw.
Stables for the Co-operative Society.

MIDDLESEX.

- Ealing*.—Town Hall extension (£4,000). Mr. C. Jones, Council surveyor.

NORTHAMPTONSHIRE.

- Daventry*.—Council School (£4,000).
Kettering.—Public Baths: additions and alterations.
School for defective and invalid children (£3,000).
Northampton.—Picture palace, Abingdon Avenue, for Mr. C. Robinson.
Oundle and Raunds.—Council Schools.
Ravensthorpe.—Engine and boiler house extension. Water-works engineer.

NOTTINGHAMSHIRE.

- Huthwaite*.—(Supplementary to July 12.) Carnegie Library (£2,000). Mr. E. W. Bostock, architect.
Pleasley Hill.—Primitive Methodist Chapel and Schools, Poplar Drive.

SHROPSHIRE.

- Newport*.—Two houses, Watery Lane, for Mr. Newbold.

SOMERSET.

- Kilve*.—Parish Church: improvement and restoration. Mr. F. Bligh Bond, F.R.I.B.A. (of Bristol), architect.
Street.—House at Wraxhill, for Mr. A. Martin.
Taunton.—Public Hall.

STAFFORDSHIRE.

- Cheadle*.—Council Schools.
Lichfield.—Council School, Frog Lane, for 410 places (£3,300). Mr. F. T. Beck (of Wolverhampton), architect. Messrs. Thorniloe & Sons, contractors.
Tipton.—Boys' and Girls' Council Schools, Cronhills and Whitehall Road, Great Bridge (for 800 places each).

SURREY.

- Ashstead*.—Council School extension for 250 places (£4,000).
Camberley.—Council School: additions and alterations (£2,000).
Egham.—Hythe Council School: alterations and improvements (£950).
Farnham.—School of Art: enlargement.
Hook.—Infants' Council School for 100 places (£2,300).
Richmond.—Nos. 1 and 2 Kew Foot Road: re-building. Mr. A. S. Ley (of London), architect.
"Abingdon House," Kew Green: additions. Mr. E. J. Partridge, F.S.I., architect.
"Elmroyd," Queen's Road: additions. Messrs. Brewer (F.R.I.B.A.), Smith & Brewer, architects.
Six shops, George Street, for Mr. J. W. Hunter.
Walton and Herisham.—Upper Standard school, West Grove.
Walton-on-Thames.—Central School.
West Byfleet.—Council School.

SUSSEX.

- Brighton*.—Additions and alterations to premises in Wykeham Terrace and Queen's Square, as headquarters for Cyclists' Battalion.
Haywards Heath.—Vol. school for 80 places (£1,500).
Littlehampton.—Fire station.
Uckfield.—Drill Hall.

WORCESTERSHIRE.

- Redditch*.—Cookery and Handicraft School.

- Stourbridge*.—Brewhouse, Dudley Road, Lye, for Mr. Rhodes.
Buildings, High Street, Lye, for Mr. White.

YORKSHIRE.

- Barnoldswick*.—Public Elementary School for 200 places.
Goole.—R.C. Church (£3,000).
Harrogate.—Royal and Starbeck Baths: extensions and improvements (£3,300).
Heckmondwike.—Central Stores, Town Green: extension for the Heckmondwike and District Co-operative Society (£14,000).
Royston.—House and outbuildings, High Street. Mr. C. L. McLintock (of Barnsley), architect.

WALES.

- Ammanford*.—Intermediate School.
Bangor.—Congregational Chapel, Pendref: schoolroom, kitchen, &c. Mr. F. A. Roberts (of Mold), architect.
Bargoed.—Girls' Council School: additions.
Bedlinog.—Boys' Council School: additions and alterations.
Bettws (near Bridgend).—Council School.
Blaengarw.—Girls' and Infants' Council School: additions and alterations.
Cwmpengraig (Carmarthenshire).—Council School.
Furnace (near Llanelli).—Council School.
Glyn (near Ruabon).—Post Office, shop and house for postmaster.
Gyffylliog.—"Red Lion": alterations. Mr. J. Hughes (of Denbigh), architect.
Nantygroes (Carmarthenshire).—Council School.
Rhewl.—"Drovers' Arms": alterations. Mr. J. Hughes (of Denbigh), architect.
Ruthin.—Four workmen's houses (£800).
Wrexham.—Ten cottages.
Ystradgynlais.—"Ynisedwyn Arms Hotel": additions.

SCOTLAND.

- Cathcart*.—Workshops at Holm Foundry, for Messrs. G. & J. Weir.
Duffus.—Board School.
Dunbar.—Gymnasium at the Barracks, Castle Park (£2,000). Messrs. Finlayson & Sons (of Leith), contractors.
Edinburgh.—House, Murrayfield Road, for Mr. J. Stewart.
Cooke's Circus, Fountainbridge: alterations into a picture theatre, for Mr. R. C. Buchanan.
Board School, King's Park, for 850 places (£12,500).
Stores at No. 130 Canongate, for Messrs. W. Younger & Co., Ltd.
Glasgow.—Twelve tenement houses, Woodcroft Avenue, Broomhill, for the Hyndland Building Co. (£25,000).
Four terrace houses, Kilmarnock Road, Newlands, for Messrs. G. Eadie & Sons.
Six terrace houses, Langside Road, Newlands, for Messrs. J. Allan & Son.
Glengarnock and Kilbirnie (between).—Board School.
Methil.—Premises, Harbour Wynd: additions and alterations for the Methil Co-operative Society. Mr. G. C. Campbell, architect.
Mylnefield.—Board School. Separate trade contractors.
Portsoy.—The Mills: additions for Mr. Ewing. Messrs. D. & J. R. McMillan, F.R.I.B.A. (of Aberdeen), architects.

IRELAND.

- Killough*.—Block of houses, water tower, engine house, &c., at the Charles Sheils Institution. Messrs. Young (F.R.I.B.A.) & Mackenzie (of Belfast), architects.

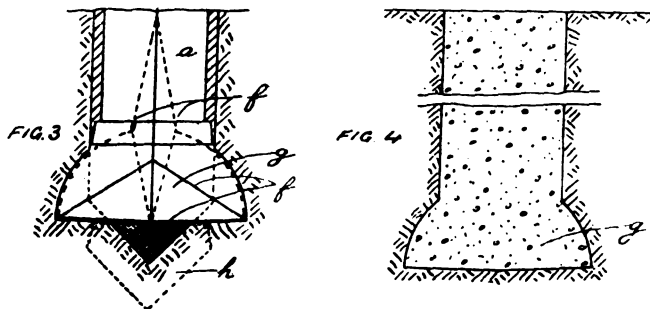
BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 14,695. June 21, 1911.—Improvements in concrete piles. J. M. Leighton, 4 Easton Crescent, Belfast. This invention relates to concrete piles of the kind constructed by driving a hollow preparatory pile or tube fitted while being driven with a loose point or shoe, which may or may not be recoverable, placing concrete in and withdrawing the tube, the concrete flowing out and filling the opening in the ground, the concrete, when set, forming the permanent pile. The

object of this invention is to construct the lower end of the permanent pile in such a manner that it may offer greater resistance to further penetration than if moulded throughout in the form of the tube and shoe. Figs. 3 and 4 show a pile with an enlarged flattened end. Fig. 3 shows the tube a



after it has been withdrawn a little. An expanding bore implement, *f*, is indicated by dotted lines as it is introduced down the tube, and by whole lines as it is when expanded after cutting away the earth at the sides of the hole forming the enlarged flattened end, *g*, to the pile. A non-recoverable point, *h*, is shown by dotted lines in the position it might occupy with relation to the base of the pile. The entire earth may be cut away, or the whole or any part of it may be allowed to remain to fill up the impression of the point. Fig. 4 shows the complete pile so formed. After having prepared the ground in the manner described, the concrete forming the pile is deposited and the tube withdrawn. The pile constructed in this manner must necessarily offer greater resistance to further penetration than it would if made in the form of the preparatory pile and point. June 19, 1912.

PATENT SPECIFICATIONS PUBLISHED JULY 11, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 14,439. June 19, 1911.—S. W. Edwards, 19 Sydney Road, Shirley, Southampton. Automatic electric fire alarm.
14,517. June 19, 1911.—H. W. Longdin, 10 Genoa Road, Anerley, Kent. Stone blocks for the paving of streets, roads, or the like.

14,696. June 21, 1911.—The Safety Tread Syndicate, Ltd., 15 Barbican, E.C., and E. S. Higgins, 21 Cornford Grove, Balham, S.W. Stair treads.

16,358. July 15, 1911.—Joseph Hollis, 1 St. Paul's Road, Leicester; George Scattergood, 104 Barclay Street, Leicester; and Albert Bailey, 16 Ashleigh Road, Leicester. Fire escape apparatus and lifting and lowering apparatus of general application.

18,117. Aug. 10, 1911.—Herbert Kohn, 158 Winterthurerstr., Zurich. Erection of brick walls and the like.

18,283. Aug. 12, 1911.—G. F. Ferns and W. G. Jackson, P.O. Box 211, Randfontein, Transvaal. Roof guttering support.

18,726. Aug. 19, 1911.—Robert Thompson, 11 Elborough Street, Southfields, S.W. Taps or cocks.

19,315. Aug. 29, 1911.—C. T. Lee, 9 West Side, Wandsworth Common, architect and surveyor. Construction of strong rooms, safes, and so forth.

20,673. Sept. 19, 1911.—T. A. Luke, 12 Brazennose Street, Manchester. Sliding ladders and tracks therefor.

21,007. Sept. 22, 1911.—William Hartell, 44 New Street, Henley-on-Thames. Fencing.

21,510. Sept. 29, 1911.—C. L. Newland, Victoria Villa, Cavendish Road, Merton. Device for automatically opening and closing window valves and the like.

25,317. Nov. 14, 1911.—E. C. Reynolds, 6 Manse Street, Dunedin, N.Z. Time locks.

25,969. Nov. 21, 1911.—J. B. Forster, 15 The Terrace, Merton Road, Wandsworth, S.W. Installation for extinguishing fires and for conducting away escaped gases, vapours and the like.

28,307. Dec. 15, 1911.—Incandescent Lighting and Stove Co. and J. Stubbers, Oakley Hamilton, Ohio, U.S. Atmospheric burners for stoves.

28,743. Dec. 20, 1911.—Date claimed under International Convention Dec. 22, 1910. Franz Kandler, Schloss Lannach, Steiermark, Austria. Roofing tiles.

29,029. Dec. 23, 1911.—F. W. Hinkel, 2 Louise, Henrietenstr., Tempelhof, near Berlin. Process and apparatus for extinguishing fire by means of dry powder.

1,781. Jan. 22, 1912.—W. B. Hughes, 330 High Street, Newark, New Jersey, U.S. Fire and temperature alarms.

1,961. Jan. 24, 1912.—Date claimed under International Convention Jan. 26, 1911. Soc. Generale des Nitrures, 12 rue Roquepine, Paris. Refractory blocks and bricks.

2,811. Feb. 3, 1912.—Henry Moat, jun., Bath Lane, Newcastle-on-Tyne. Method of strengthening or armouring ladders.

4,183. Feb. 19, 1912.—Anton Kleber, 5 Wilhelmstr., Saarbrücken, Prussia. Adjustable casings for the construction of walls by means of plastic materials.

5,044. Feb. 29, 1912.—W. A. Harrison, 32 Rosslyn Street, St. Michael's, Liverpool. Roller blinds or awnings.

5,456. March 4, 1912.—Date claimed under International Convention March 2, 1911. Friedrich Schwarz, 14 Ziethenstr., and Wilhelm Holthausen, 7 Antonienstr., Duisburg. Paving machines.

6,783. March 19, 1912.—Lips, Ltd., and J. H. Sains, Kingsway House, Kingsway, London. Safety locks.

8,244. April 4, 1912.—L. B. De Laitte, 73 Moorgate Street, E.C. Air carburetting apparatus.

8,881. June 19, 1911.—Domestic Appliances Co., Rochester, N.Y., U.S.A. Dust collectors and destructors.

A WAYGOOD EXTENSION.

In the record of any enterprise which has been steadily progressing during seventy and more years there could hardly fail to be certain red-letter days to serve as milestones along the road of prosperity. The firm of Messrs. R. Waygood & Co., Ltd., for instance, have, since the founder first came to London in 1840, many dates full of significance, both to themselves and in some cases to the general public also. When Mr. Richard Waygood had, in the thirties, built up a successful business in the West of England as a general engineer and maker of hot-water apparatus and stoves, he boldly transferred it to London. Twenty-three years later—namely, in 1863—the site of their premises was acquired by a railway company, and a move was made to Falmouth Road, S.E. A small piece of ground was then sufficient. Ever since that time the firm has remained in Falmouth Road, but their works have grown in spaciousness and efficiency with the years. The latest, but doubtless not the last, extension was successfully inaugurated on Tuesday last, when a splendid new building, with its galleries on first and second floors and a large basement, was declared open by the Mayor of Southwark. The cubic contents of this new building in conjunction with an older one to which it is attached are about 750,000 cubic feet. It is intended to concentrate in it the entire construction and fitting of the electrical output. The total capacity of the buildings at present occupied by the firm is 1,700,000 cubic feet. As Falmouth Road is a long one, we hope that the firm will be able to make yet further adjacent enlargements in the near future as their business increases.

The history of R. Waygood & Co., Ltd., contains, as already suggested, many points of public interest, for it synchronises with at least one branch of mechanical engineering. Up to about 1865 the chief manufactures at "Newington Ironworks" were presses, pumps, and machinery for treating rice, coffee, and Colonial products. But in that year Mr. H. C. Walker, M.I.M.E., the present Chairman and Managing Director, entered the service of the firm, and devoted special attention to lifting appliances, for which he foresaw a large possibility of development at the time. A commencement was made with hand lifts. The earliest lifts designed for raising persons were driven by winding gear and belts, but the application of hydraulic power for this purpose gave the first great impetus to the employment of passenger lifts. One of the earliest prominent installations in this country was the Grand Hotel, Charing Cross, opened in 1880, which was carried out by the firm. In 1893 Queen Victoria instructed Messrs. Waygood to put up a lift for her special use at Balmoral, which gave such satisfaction that instructions were given for similar lifts to be installed at Osborne, at Windsor, and also at Buckingham Palace. These were all worked by hand power. The honour of lift makers to the King was, by the way, given to the firm by both King Edward VII. and King George.

In recent years the most remarkable development has been in the employment of electric power for lifting purposes. The first electric lift erected by this company, which, it is understood, was the first made in this country, was exhibited at the Crystal Palace in the year 1890. Since that time they have given special attention to the development of this

class of work, and have now installed over 10,000 electric and hydraulic lifts of all kinds. They have made a special feature of automatic lifts, three of these being fitted in Buckingham Palace.

In 1901 the business was turned into a public limited liability company, with a capital of £300,000, of which £270,000 was subscribed. The employees in the various branches now number over 1,000, and the wages and salaries amount to nearly £100,000 per annum. The relations between employers and employed at Messrs. Waygood's have always been of a notably happy character. The sons and grandsons of the original partners are still actively associated in the business, while a pleasant feature of the proceedings last Tuesday was the warm cordiality of the staff towards the directors on the platform and towards three of the workmen, who received silver cups and a £10 note in recognition of more than half a century's service with the house of Waygood.

L.C.C. SCHOOL BUILDING.

THE Education Committee of the London County Council contemplate the acceptance of tenders during the approaching summer recess amounting to £228,309 on building work. They recommend that authority should be given to open the tenders and to accept the lowest satisfactory one in each case in order that the contractors may commence without delay, instead of waiting until the Council reassembles. The various works are as follows:—

1. Bethnal Green: Daniel Street.—Enlargement by 384 places.
2. Deptford: The "Ravensbourne."—New school for 768 children.
3. Greenwich: Randall Place.—Improvement and enlargement.
4. Hackney: Sigdon Road.—Enlargement by 384 places. Tottenham Road.—Reorganisation; Wilton Road.—New central school for 388 children.
5. Hackney: The "Craven Park."—Enlargement by 120 places; Oldfield Road.—Alterations for use as central school.
6. Haggerston: Brunswick Street (M.D.).—Enlargement by 25 places.
7. Islington: Elthorne Road.—New school for 100 physically defective children; Upper Hornsey Road (M.D.).—Enlargement by 50 places.
8. Kensington: Middle Row.—Rebuilding for 1,080 children.
9. Lewisham: Lewisham Bridge.—Rebuilding for 744 children.
10. Limehouse: Gill Street: Enlargement by 112 places; High Street, Shadwell.—New school for 100 mentally defective children and 100 physically defective children.
11. Mile End: Tollit Street.—New school for 125 physically defective, 150 mentally defective, and 80 deaf children.
12. Norwood: Caldecot Road.—New school for 854 children.
13. Paddington: Bravington Road.—New school for 75 mentally defective children.
14. Stepney: Senrab Street.—Enlargement by 256 places.
15. Walworth: Victory Place.—Rebuilding for 768 children.
16. Wandsworth: The "Furzedown."—New training college for 264 students, and hostels.

The Finance Committee support the recommendation, as the circumstances are exceptional. But they make an exception in the case of the "Furzedown" school at Wandsworth.

MR. W. G. R. SPRAGUE, architect, 10 Jermyn Street, W., has prepared plans for the proposed theatre in West Street, Shaftesbury Avenue, W. The premises will have accommodation for 660 persons.

THE annual agreement in the building trade, signed recently between the Employers' Association and the District Committee of the Glasgow and Suburban Branches of the Operative Masons' Society, this year provides for an increase of $\frac{1}{2}d.$ per hour being granted to the men. The advance will not take effect, however, until January 1, 1913. The present rate of wages is $9d.$ per hour, and the increase to $9\frac{1}{2}d.$ an hour, according to the agreement, is to be binding for six months until June 30, 1913. A request by the district committee that the working hours be reduced from 51 to 50 a week, so that the workmen might cease work at 12 o'clock on Saturdays instead of at one o'clock as at present, was withdrawn, as was also another request that in the event of disputes taking place throughout the year they be submitted to arbitration.

BIRMINGHAM'S NEW PICTURE GALLERIES.

ON Wednesday, the 17th inst., Birmingham's new art galleries were opened by Mrs. John Feeney, widow of the late Mr. John Feeney, proprietor of the *Birmingham Daily Post*.

The portion opened is in reality only half of a scheme for the purpose of which Mr. Feeney bequeathed the sum of £50,000; the other buildings will be opened in two or three years' time, and will consist of six or eight additional picture galleries and two large museums of casts. The old buildings, which are now used entirely for the display of objects of industrial and decorative art, with the exception of balconies containing drawings of the English pre-Raphaelite school and Burne-Jones, are connected with the new galleries by a bridge vestibule spanning Edmund Street.

This handsome entrance to the Feeney Galleries, as the ten new rooms are aptly styled, contains three pieces of tapestry executed by William Morris from designs by Burne-Jones. These new galleries form part of the large Council House Extension, an imposing building facing four streets, which was designed by Messrs. H. V. Ashley & Winton Newman, architects, 14 Gray's Inn Square, London, involving an outlay of, roughly, £200,000.

The quantity surveyors are Messrs. Hugh Watkins, 13 Gray's Inn Square, London, and Anthony Rowse, 117 Colmore Row, Birmingham.

The new picture galleries are spacious and simple apartments, entirely suited to their purpose. The pictures, all of which, with only one or two exceptions, are the property of the city of Birmingham, comprise one of the finest collections to be found, and the city is enormously indebted to Alderman the Right Hon. Wm. Kenrick, who for twenty-eight years has been Chairman of the Art Gallery Committee, and also other generous donors.

Great credit is due, too, to Sir Whitworth Wallis, F.S.A., Keeper of the Museum and Art Gallery, and his assistant, Mr. Arthur B. Chamberlain, who have worked so hard and enthusiastically for years.

It is a rare pleasure to see pictures hung to such advantage. The Burne-Jones room is, of course, specially attractive, and the well-known David Cox collection will always be one of Birmingham's much envied assets in the art world.

The works of T. M. Rooke, R.W.S., are of special interest to architects; also a few of Samuel Prout's paintings.

Names such as Turner, Rossetti, Watts, Millais, Holman Hunt, Madox Brown, &c., which are to be found in one room even, should be sufficient to attract lovers of the artistic from the farthest corners of the country to Birmingham's model galleries.

VARIETIES.

THE Burton Corporation Public Works Committee recommends the widening of the Trent Bridge from the recent extension up to Meadow Road. The work will be done with reinforced concrete, at an estimated cost of £7,000.

THE municipal authorities of Pilsen, Austria-Hungary, have approved the plans and estimate for the erection of an Industrial Academy at a cost of about £32,000. A college building will also be erected this year at Pilsen at a cost of about £78,000.

THE foundation stone of a new central railway station was laid a short time ago at Salonica. The station, which will cost about £140,000 to build, will be situated to the west of the city between the new harbour and the old Tophané Fortress.

THE demolition of some small houses on the south side of St. Bartholomew the Great, Smithfield, for the erection of warehouses has resulted in the exposing of the triple arched entrance from the cloister to the chapter-house.

THE Finance Committee of the Liverpool Corporation have had under consideration a report from the surveyor, giving the result of an interview between Sir William Goscombe John, R.A., and himself as to the proposed King Edward VII. memorial at St. George's Hall. The committee inspected a model showing the proposed alterations at the south end of the hall. The surveyor has just been authorised to invite tenders for carrying out the alterations in accordance with a resolution of the Council of December last.

THE Falmouth Town Council have resolved that Mr. Cummings be engaged to give a preliminary report with estimate to deal with the sewage disposal of the borough so far as it affects the foreshore of the harbour, at a fee of fifty guineas and travelling expenses.

THE Architect and Contract Reporter.

FRIDAY, JULY 26, 1912.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, etc., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

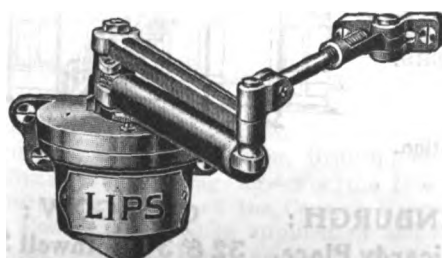
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Oct. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARDIFF.—Aug. 6.—The Corporation invite designs and estimates in competition for a fire brigade station proposed to be erected in Westgate Street, Cardiff. The Corporation have appointed Mr. A. Marshall Mackenzie, architect, to act as assessor. The deposit of £2 2s. will be returned to all architects submitting bona-fide designs or who return the conditions within six weeks. Full particulars of the competition will be sent to the architects on application to Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

(Continued on page 7.)

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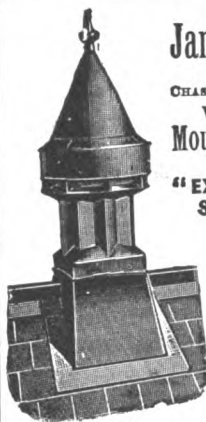
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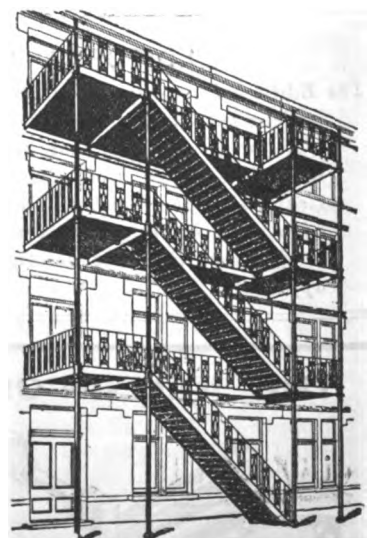
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CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

GLASGOW.—The Corporation of the City of Glasgow invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

CONTRACTS OPEN.

ABERDARE.—July 30.—For erection of two cottages, Llwyd-coed, Aberdare, and the construction of a private road to same. Mr. E. C. P. Monson, F.R.I.B.A., F.S.I., M.S.A., Finsbury Pavement House, London, E.C.

ABERNANT (ABERDARE).—Aug. 10.—For erection of four blocks, comprising thirty-two tenement dwellings, at Abernant, for the Aberdare Urban District Council. Mr. T. Phillips, clerk, Town Hall, Aberdare.

ACKWORTH MOOR TOP.—Aug. 3.—For the whole of the works in the erection of stationmaster's house, four cottages, tranship shed, and weigh offices, for the Brackenhill Light Railway. The Resident Engineer, Ackworth Moor Top, Yorks., or Mr. William Bell, architect, York.

BELFAST.—Aug. 23.—For building new National schools at Lower Sydenham, Belfast, for the Strand Presbyterian Church. Messrs. Fennell & Clarke, architects, 2 Wellington Place, Belfast.

BELHELVE (SCOTLAND).—July 31.—For the whole of the work of new cottage to be erected at Potterton, Belhelvie. Mr. J. M. Clapperton, solicitor, 177 Union Street, Aberdeen.

BESSINGBY (YORKS.).—July 30.—For construction of a cottage at Bessingby, for Mr. A. G. W. Wright. Mr. J. Earnshaw, architect, Carlton, Bridlington.

BIRMINGHAM.—Aug. 26.—For the erection of buildings in further extension of the Council House (Second Extension Contract). Send in application and £5 5s. deposit by July 31 to Messrs. H. V. Ashley & Winton Newman, architects, 14 Gray's Inn Square, London, W.C. (See advertisement.)

BISHOP'S CASTLE.—Aug. 1.—For the following work at Bishop's Castle Workhouse:—Contract 1: Alterations in laundry, including louvre ventilator, new windows, gulleys, repairing seven chimney tops. Contract 2: Alterations in wash-house, including steam exhaust dome, repairing arch, protecting pipes, &c., from frost, stop taps. Mr. P. H. Newill, clerk, Clun Union, Bishop's Castle.

BRADFORD.—July 30.—For the several trades required in erection of a test workhouse at Daisy Hill. Deposit £1 1s. Mr. F. Holland, architect to the Board, 22 Manor Row, Bradford.

BRAINTREE.—July 29.—For work required at the Congregational Church. Mr. C. Parmenter, 6 Nellie's Cottages.

BRENCHLEY (PADDOCK WOOD, KENT).—Aug. 5.—For the execution of certain painting and repairs required to be carried out at the Brenchley-Paddock Wood Council school, for the Kent Education Committee. Mr. W. H. Robinson, architect, Caxton House, Westminster.

CASTLE CARY.—July 30.—For erection of a drill hall, sergeant instructor's cottage, and miniature rifle range at Castle Cary, Somerset, for the Territorial Force Association. Deposit £1 1s. The Armoury, Castle Cary, or Mr. A. J. Pictor, A.R.I.B.A., Bruton.

CASTLE EDEN.—July 31.—For the whole of the labour and material required in the erection of engine houses and heapstead at Blackhall Colliery, for the Horden Collieries, Ltd. Mr. J. Hamilton, architect and surveyor, Horden Collieries, Ltd., Castle Eden.

CHESHAM.—Aug. 7.—For the construction of an open-air swimming bath on the Moor, for the Chesham Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Council Office, Chesham.

CHICHESTER.—July 29.—For erection of caretaker's quarters at the high school for girls, Chichester, for the West Sussex County Council. Mr. H. P. Roberts, F.R.I.B.A., architect, Thurloe House, High Street, Worthing.

CLECKHEATON.—July 31.—For the various works required in erection of Spiritualist church, Bradford Road, Cleckheaton. Messrs. R. Castle & Son, architects, London City and Midland Bank Chambers, Cleckheaton.

COLDRIDGE (DEVON).—Aug. 7.—For erection of farm buildings at South Moor, in the parish of Coldridge. Mr. W. Barrons, Burnham, Somerset.

CORK.—Aug. 1.—For building two labourers' cottages and fencing plots—one in Carrigaline E Division and one in Monkstown E Division—at a cost not exceeding £150 per cottage, for the Cork Rural District Council. A deposit of £5 per cottage is required with each tender. Mr. J. Cotter, clerk.

CUXTON (KENT).—July 31.—For the erection of a retaining wall and fence at the Cuxton Council school, for the Kent Education Committee. Mr. P. Harman, 2 Rosslyn Villas, Halling, Rochester, Kent.

DALTON (HUDDERSFIELD).—July 29.—For erection of additions to Grove Cottage, Dalton. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

DOLPHINTON.—For mason and joiner works of proposed new school house at Dolphinton, for the Dolphinton School Board. Deposit 10s. 6d. Messrs. Traill & Stewart, 38 High Street, Lanark.

DOWNPATRICK.—July 27.—For the erection of a casual ward and strong room at the workhouse, for the Guardians. Mr. R. L. Morrow, clerk, Down.

DUNDEE.—July 29.—For mason and structural steelwork of new training college, Dundee, for the St. Andrew's Provincial Committee for the Training of Teachers. Mr. T. M. Cappon, F.R.I.B.A., 32 Bank Street, Dundee. Deposit £1 1s.

EBBW VALE.—Aug. 2.—For erection of an electric theatre at Ebbw Vale, for the Ebbw Vale Cinema, Ltd. Deposit £2 2s. (returnable). Messrs. Johnson & Richards, architects, Merthyr Tydfil.

FLETON (HUNTS.).—Aug. 10.—For the enlargement of the County secondary school at Fletton by the addition of a new staff room, cloakroom, &c., for the Hunts. Education Committee. Mr. S. G. Cook, clerk to the committee, County Education Offices, Huntingdon.

FOLKINGHAM.—For proposed new dwelling-house and stables to be erected in Folkingham for Mr. T. W. Stanton. Mr. G. W. Cooper, L.R.I.B.A., architect and surveyor, 1 Market Place, Sleaford.

HALIFAX.—July 30.—For the various works required in structural alterations to the Bradford District Bank, Ltd., new premises in Commercial Street and Cheapside. Messrs. R. Horsfall & Son, architects, 22A Commercial Street, Halifax.

HANWELL.—Aug. 2.—For erection of one, two or three partitions (as may be hereafter decided upon by them) in classrooms at their Park School, Framfield Road, Hanwell, W., for the Managers of the West London School District. Mr. F. G. Beeching, clerk to the Managers, West London School District, Ashford, Middlesex.

HANWORTH.—July 29.—For the proposed restoration of the nave and aisle roofs of Hanworth Church. Messrs. Lacey & Upcher, architects and surveyors, 6 Upper King Street, Norwich.

HAMILTON.—Aug. 5.—For the following works in connection with the erection of new municipal offices: (1) Mason and brick work; (2) carpenter and joiner work; (3) plumber work; (4) slater work; (5) plaster work and concrete floors; (6) tile work; (7) glazing work; (8) steel beams and steel roofing work; (9) heating apparatus; and (10) electric lighting for the Town Council. Mr. P. M. Kirkpatrick, town clerk, Town House, Hamilton.

HIGHBRIDGE (SOMERSET).—Aug. 6.—For erection of a new infants' Council school at Highbridge, for the Somerset County Council. Messrs. Samson & Colthurst, architects, 51 High Street, Bridgwater.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LLANEDARNE.—July 30.—For erection of three cottages at Llanedarne, near Cardiff. Mr. J. L. Wheatley, town clerk, City Hall, Cardiff.

LONDON.—July 31.—For the erection, construction, and completion of sanitary conveniences and urinals, &c., at the Electricity Works, Fulham Palace Road, W., for the Hammersmith Borough Council. Mr. H. Mair, borough surveyor, Town Hall, Hammersmith, W.

MERTHYR TYDFIL.—Aug. 12.—For erection of forty-eight workmen's dwellings on the Court Estate, near the Caemary-dwyn farm, for the Corporation. Deposit £2 2s. Mr. T. A. Rees, town clerk, Town Hall, Merthyr Tydfil.

NORTHWICH.—Aug. 14.—For the erection of public baths and washhouses. Send applications and £2 2s. deposit by July 29 to Mr. J. A. Cowley, clerk, Council Offices, Northwich.

PEAK FOREST.—For erection of new premises for the Great Rocks Co-operative Society, Ltd. (Peak Forest). Deposit £1 1s. The Architect's Department, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

PORTRANE (CO. DUBLIN).—Aug. 8.—For erection of a new coastguard station at Portrane, Co. Dublin. Deposit £1. Mr. H. Williams, secretary.

ST. DOGMAELS.—Aug. 3.—For the erection and completion of a new vestry at Bethsaida, St. Dogmaels. Mr. J. Teifion J. Williams, architect, Napier Street, Cardigan.

SALISBURY.—July 30.—For new oak sashes at the Council chamber. Mr. W. J. Goodwin, A.M.I.C.E., city engineer and surveyor, Municipal Offices, Salisbury.

SILSDEN.—Aug. 9.—For the builder, joiner, slater, plumber, plasterer, painter, ironfounder, and smith and asphalt work at Silsden new school, for the West Riding Education Committee. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Skipton. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

SOWERBY BRIDGE (YORKS).—July 31.—For pointing walls of the Bolton Brow Council school, for the Sowerby Bridge Education Committee. Mr. F. J. Macdonald, Education Offices, Sowerby Bridge.

THATTO HEATH.—July 31.—For the erection and completion of a public library, together with all contingent works, situate at the south-west corner of Thatto Heath Park, near St. Helens. Mr. A. W. Bradley, M.I.C.E., borough engineer, Town Hall, St. Helens.

TREBANOS.—Aug. 3.—For erection of the new schoolroom, &c., at Trebanos, Swansea Valley, for the trustees of Gosen Congregational Chapel. Mr. D. Davies, architect, Clydach, Swansea Valley.

TREDEGAR.—Aug. 8.—For erection of a new chapel, adjoining Llys-Wedog Bridge, at Tredegar, Mon., for the trustees of the Poplar Road Congregational Church. Mr. A. F. Webb, M.S.A., architect and surveyor, Tredegar Chambers, Blackwood. Deposit £2 2s.

TREFNANNEY.—Aug. 6.—For work of additions and improvements to the Trefnanney Council school, for the Montgomeryshire Education Authority. Deposit £1 1s. The County Education Offices, Newtown.

WALES.—July 31.—For the following works—viz.: Alterations and repairs (including extensive reroofing) to stables, coach-house, garage, &c., at Clynfiew; recementing the exterior of mansion, including renewal of troughing, &c., at Clynfiew; construction of new reservoir and laying a new water main, with branches to stables, &c., at Clynfiew. Mr. T. E. Lewis Bowen, owner, Clynfiew, near Cardigan. Messrs. Morgan & Richardson, solicitors, Cardigan.

WALES.—July 31.—For works of improvements and alterations to the Llawryglyn Council School and out-offices, and for a proposed new water supply, for the Montgomeryshire Education Authority. Deposit £1 1s. The County Education Offices, Newtown.

WALES.—Aug. 3.—For the erection and completion of a new vestry at Bethsaida, St. Dogmaels. Mr. J. Teifion J. Williams, architect, Napier Street, Cardigan.

WALES.—Aug. 7.—For rebuilding business premises in Rheola Street, Penrhiwceiber, for Messrs. the Penrhiwceiber Co-operative Society, Ltd. Deposit £2 2s. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

TENDERS.

BRIXWORTH.

For the erection of a new isolation hospital at Holcot, for the Rural District Council.

Souster & Son	£812	0	0
Crane	809	0	0
Clarke	799	0	0
Marriott	778	0	0
Higgs	777	0	0
Beardsmore & West	775	0	0
Green	750	0	0
Claypole & Brighton	746	0	0
Fisher	740	0	0
Higgins	690	0	0
Sharman	677	0	0
R. W. BUSWELL, Moulton (accepted)	675	0	0

Craghead.

For the various works required in erection of shops, warehouse, and stabling at Craghead, Durham. Mr. D. M. SPENCE, architect, Newcastle. Quantities by the architect.

Ogston	£1,353	6	5
D. & J. Ranken	1,289	0	0
Ray	1,197	17	4
Dyson	1,172	17	0
Taylor	1,163	8	9
Wears & Sons	1,159	19	6
Fairington	1,149	12	0
Mole	1,100	12	0
C. & L. Craven	997	12	0
M. H. BOWERS, Rowlands Gill (accepted)	990	0	0

CRICKLEWOOD.

For construction of an engine and pump house and other contingent works at Cricklewood pumping station, for the Metropolitan Water Board.

Airds, Ltd.	£5,885	11	4
Wall, Ltd.	5,653	9	7
Kirk & Randall	5,554	2	5
Strand Building Co.	5,474	18	7
CHESSUM & SONS (accepted)	5,075	1	4
Pattinson & Son's and Perry & Co.'s tenders not checked.			

CROYDON.

For the erection of the new sub-station, Mint Walk, Croydon, for the Lighting and Electricity Committee.

Grace & Marsh	£226	0	0
J. Smith & Sons	205	0	0
W. Smith & Sons	197	10	0
Saunders	195	0	0
SERGWICK (accepted)	149	0	0

HEREFORD.

For extensions at Lord Scudamore's Council school.

WILKS & SON (recommended)	£2,987	0	0
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HAWKHURST (KENT).

For erection of a house, for the Misses O'Brien, of Dover.
Messrs. WORSFOLD & HAYWARD, architects, Dover.
Quantities by the architects.

Denne & Son	£3,194	0	0
Wallis & Sons	3,076	0	0
Epps	2,850	0	0
Paramor	2,786	0	0
T. T. Denne & Son	2,687	0	0
Davison	2,645	0	0
EDWARDS, Hawkhurst (accepted)	2,600	0	0

HINDLEY.

For erection of Sunday school extensions at the Hindley
Protestant Dissenting Chapel. Messrs. T. D. HURST
& A. PLATT, architects. Quantities by the architects.

Byrom & Sons	£1,940	0	0
Bickerstaff	1,927	17	0
Johnson & Son	1,890	0	0
Wilson & Co.	1,858	0	0
Gerrard, Ltd.	1,837	0	0
Clough & Gaskel	1,828	13	0
Fairhurst & Son	1,750	0	0
STOTT & SONS, Ladies Lane, Hindley (accepted)	1,781	10	6
Architects' estimate	1,892	0	0

KEIGHLEY.

For the extension of the baths in Albert Street.

Accepted tenders.

Paul Rhodes, Leeds, mason's work	£2,937	0	0
Jno. Cooke, Huddersfield, concreter's	841	19	9
Wm. Thornton, Keighley, plasterer's	752	17	6
T. Atkinson, Keighley, plumber's	632	3	0
Royles, Ltd., Manchester, filtration plant	610	0	0
Wm. Thornton, Keighley, slater's	157	0	0
J. Driver & Son, Keighley, joiner's	122	6	0
Eli Thompson, Keighley, painter's	93	6	10

KINGSTON-ON-THAMES.

For an addition to the electricity works building and for
engine foundations, for the Corporation. Mr. R. H.
CLUCAS, borough surveyor, Kingston-on-Thames.

Kavanagh & Co., Surbiton	£1,987	0	0
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LEEDS.

For the erection of a house, for the Vice-Principal of the
new Training College.

ATKINSON & SONS (recommended)	£1,320	6	3
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LONDON.

For the erection of the Homerton branch library, for the
Hackney Borough Council.

Blake, Ltd.	£5,516	4	9
Sharpin	5,283	6	0
Markham & Markham	5,234	0	0
Reason	5,072	0	0
Lawrance & Sons	5,011	0	0
Brand, Pettitt & Co.	4,979	0	0
Gorham	4,958	18	0
Strand Building Co.	4,824	0	0
Lawrence & Son	4,740	0	0
Whiter & Co., Ltd.	4,684	0	0
A. & S. WHEATER, Stoke Newington (re- commended)	4,545	0	0

For reconstruction of the New North Road bridge, for the
Shoreditch Borough Council.

Baldry, Yerburch & Hutchinson, Ltd.	£3,384	0	0
Dick, Kerr & Co., Ltd.	3,320	0	0
Fryer & Co.	2,685	0	0
Wall, Ltd.	2,565	0	0
Garrett & Son	2,476	0	0
Kavanagh & Co.	1,966	0	0
Higgs & Hill, Ltd.	1,898	0	0

For the supply, delivery, and erection of three centrifugal
pumps, for the L.C.C. Falcon Brook storm-water pump-
ing station.

Jens Orten-Böving & Co.	£3,141	0	0
Fullerton, Hodgart & Barclay	2,766	0	0
The Rees Roturbo Manufacturing Co.	2,360	0	0
The Rees Roturbo Manufacturing Co. (alternative tender)	2,160	0	0
Drysdale & Co.	2,158	0	0
JOHN COCHRANE, Barrhead (recommended)	1,800	0	0

LONDON—continued.

For the reconstruction and widening of the bridge carrying
High Street, Wandsworth, over the River Wandle, for
the L.C.C.

Thorne & Sons	£6,665	10	6
Ford	5,974	12	0
Dick, Kerr & Co.	5,911	14	0
Rowlingsons & Co.	5,902	12	3
Coles	5,880	19	1
John Mowlem & Co.	5,748	0	0
Muirhead & Co.	5,559	10	3
KIRK & RANDALL, Woolwich, S.E. (recom- mended)	5,510	8	2
Chief engineer's estimate	5,316	0	0

NORTHAMPTON.

For the widening of the South Bridge.

Tender A.

Souster	£10,470	0	0
Beardsmore & West	9,000	0	0
Finnegan	8,235	0	0
Hyslop	7,344	0	0
Henson	7,303	0	0
Clarke	7,269	0	0
Cosford	7,263	0	0
Archer & Son, Ltd.	6,940	0	0
Martin, Ltd.	6,856	0	0
Trentham	6,706	0	0
HIGGINS (accepted)	6,498	0	0

Tender B.

Souster	£11,904	0	0
Beardsmore & West	10,000	0	0
Finnegan	9,143	0	0
Hyslop	8,275	0	0
Cosford	8,140	0	0
Archer & Son, Ltd.	8,050	0	0
Henson	8,038	0	0
Martin, Ltd.	7,955	0	0
Clarke	7,773	0	0
Trentham	7,480	0	0
Higgins	7,098	0	0

NORTH MUNDHAM.

For improvements at the North Mundham Council School, for
the West Sussex Education Committee. Mr. H. P.
ROBERTS, architect, Worthing.

Newell & Son	£145	6	6
Tanner	112	8	8
T. START, Bognor (accepted)	109	10	0

SOUTH SHIELDS.

For the erection of another cottage home, a laundry, a store,
and the construction of the necessary roads leading to
the buildings.

W. D. ALLINSON, Whitburn (accepted)	£2,742	0	0
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WINCHMORE HILL.

For the erection of a new Council School, for the County
Council of Middlesex. Mr. H. G. CROTHALL, architect
to the Education Committee.

Tennant & Co.	£12,219	0	0
Porter	10,772	0	0
Knight & Son	10,554	0	0
Neal	10,490	0	0
Rowley Bros.	10,456	0	0
Brand, Pettitt & Co.	10,452	0	0
Lacey	10,448	0	0
Fitch & Cox	10,425	0	0
Dickens	10,400	0	0
Lawrence & Son	10,342	0	0
Fairhead & Son	10,235	0	0
Monk	10,036	0	0
MATTOCK BROS., Wood Green (recom- mended)	9,987	0	0

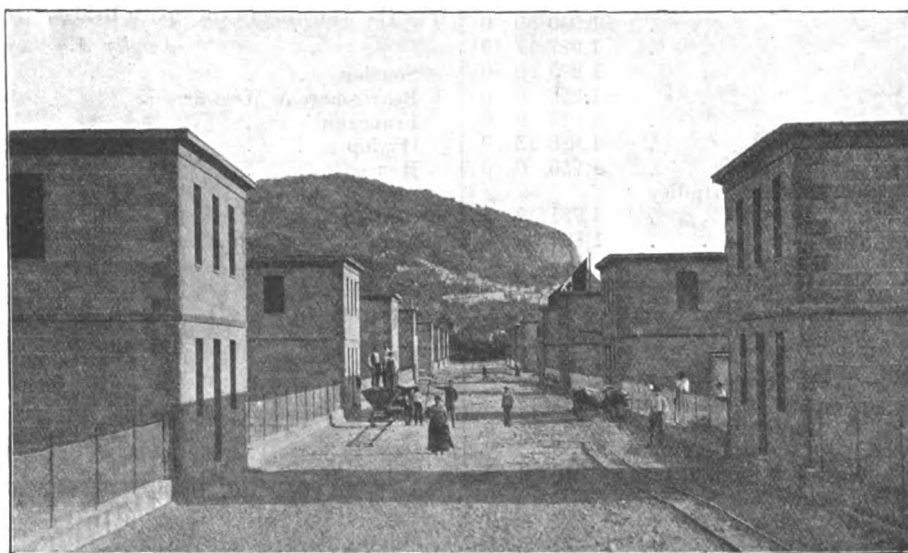
On July 3 and 17 Mr. W. Noble Twelvetrees delivered
two lectures on "Reinforced Concrete" to the students of
the Crystal Palace School of Practical Engineering. The
first lecture dealt with the fundamental principles of rein-
forced concrete construction and the general theory of beam
design. The second lecture was devoted to the principles
underlying the design of columns, struts, arches, and other
forms of structural elements, and to various aspects of prac-
tical construction in reinforced concrete. This lecture was
illustrated by specimens of various types of reinforcing steel,
as well as by models and photographs of works executed in
the United Kingdom.

CONCRETE BLOCK DWELLINGS IN EARTHQUAKE DISTRICTS.

THE district of Calabria has always been more or less subject to earthquakes. The cause is not believed to be Vesuvius, but the island volcano of Stromboli, which is the nearest, and is in constant activity. In the winter of 1905 the province was devastated to such an extent that it was necessary to go back to 1728 to find a parallel. The unhappy condition of the population was accentuated by the fact that all the villages are perched high on the hills, owing to the malaria of the plains, and they had to seek refuge in sheds while exposed to the extreme cold of high mountains.

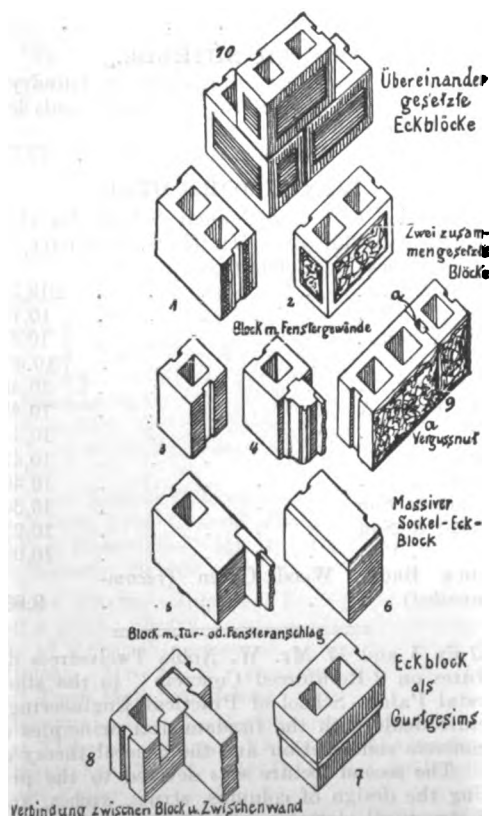
The problem of rehousing the inhabitants proved a difficult one. An interesting question arose at once as to the

advantages. Of the numerous hollow concrete block machines available the engineers to the committee selected the "Phoenix," which is the patent of Dr. Gaspary & Co., Machine Works, Markranstaedt, near Leipzig. Its great recommendation was simplicity of working. This portable machine is so constructed that the block can be placed direct from the mould on to the floor. Not only hollow and solid blocks, but also longitudinally and transversely divided half-blocks (with smooth or rusticated surfaces) can be made with this machine. The sizes of the blocks may be varied from nine to sixteen bricks. Our first illustration shows a street in the earthquake districts, and the other the adaptability of the block to various typical uses. No. 1 represents an ordinary hollow wall block with a groove down each end, into which cement is run after the blocks have been put



most suitable form of construction. Italian engineers looked for guidance to the United States. It will be remembered that after the San Francisco earthquake it was found that concrete and reinforced concrete buildings had survived the shock in a most remarkable manner. After due deliberation it was decided by one of the local committees (the Comitato Veneto-Trentino "Pro-Cala-

together (fig. 9). Fig. 10 shows how the blocks are joined together—one hollow fitting over the other, so that long air spaces are formed. Fig. 8 represents a block which is provided with notches to allow a good connection of the outer walls with thin partition walls. The other illustrations show half-blocks and the manner in which the door and window jambs are securely joined to the blocks.



bria") to employ hollow concrete blocks, as being cool in summer and warm in winter, economical in material, cheaply and quickly erected, as well as having hygienic and other

THE Carborundum Co., Ltd., manufacturers of abrasive materials, have selected Manchester as the most suitable site for their proposed new works.

THE dispute between the Baths Committee of the Manchester Corporation and the painters on the question of painting work being done by bath attendants was last week considered at a special meeting of the Baths Committee, at which a deputation of the painters' representatives attended. The committee decided that they would suspend any painting work by their attendants until next July, and would then reconsider the question. It is thought that the dispute may be brought to an end, and that the men who have been withdrawn by trade unions from work on the new baths at Withington, schools at Beswick, Boyle Street (Queen's Road), and Gorton, and at the Gorton baths, will be allowed to resume work.

CEMENT INDUSTRY IN AUSTRIA.—The following information is from the report of H.M. Vice-Consul at Ragusa (Mr. W. N. L. Shadwell) on the trade of Dalmatia in 1910-11:—There are four cement factories in Dalmatia, situated at or near Spalato. After having suffered for several years from the acute crisis through which the Austrian cement industry passed, the Dalmatian works are now, thanks to the "combine" in which they are associated with the other Austrian cement factories, doing satisfactory business. In 1911 the Dalmatian works produced 217,000 metric tons of cement, while the amount exported, according to the official statistics for 1910, the latest available, was 87,054 metric tons; in 1911, a much larger quantity must have been exported. Dalmatian cement is shipped to Trieste and to other ports along the Austrian coast, and also to Egypt, Turkey, Argentina, Brazil, India, and Russia. Vessels of the Austro-Americana Line call at intervals at Spalato to load cement for South American ports. Calcium carbide is manufactured at Sebenico, the electricity required in the process being obtained from the Krka Falls; 16,000 metric tons are produced yearly.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BERKSHIRE.

Burghfield.—Mrs. Bland's School: Handicraft and Cookery Centre.

Chaddleshworth.—Saunders' Charity Endowed School: improvements.

Shinfield Grazeley.—School enlargement.

Thatcham.—C. of E. School: improvements.

Wantage.—Wesleyan School: improvements.

BUCKINGHAMSHIRE.

Ashley Green.—Two cottages for Mr. J. Hardeon.

Calvert.—Twelve cottages for the Brickworks Company.

Chalfont St. Peter.—House, Packhorse Road, Messrs. Castle & Warren (of London), architects.

Chesham Bois.—House, Stubbs Wood Road, for Messrs. Child & Watts.

House, The Common, for Mr. H. Kennard.

Lee.—School, The Common: additions and alterations. Messrs. Kemp & How, F.F.R.I.B.A. (of London), architects.

Little Kingshill.—House, Stoney Field, for Mr. A. W. Nash.

Penn.—House, Knotty Green, for Mr. P. S. Webb.

Twyford.—Working-class houses for the R.D.C. (£1,100).

CORNWALL.

Fowey.—Cottage Hospital.

Helston.—County School extensions, Penrose Terrace.

St. Columb.—House, Blackcross, for Mr. H. J. Rowse.

Two houses, Queens, for Miss Chapman.

House, Watergate Bay, for Mr. R. Cleave.

CUMBERLAND.

Ousby.—Council School: enlargement. Mr. C. M. Wilford (of Carlisle), architect.

DEVON.

Devonport.—Borough Hospital: extension.

DURHAM.

Low Heworth.—Church Hall and School (£1,400). Mr. C. S. Errington, A.R.I.B.A. (of Newcastle-on-Tyne), architect. Mr. W. Foster (of Pelaw), contractor.

ESSEX.

Ford End (Chelmsford).—Council School: alterations. Mr. N. J. Dawson, A.R.I.B.A., architect.

Orsett.—Workhouse Women's Infirmary.

Rayleigh.—Cottage Hospital.

Romford.—Victoria Cottage Hospital: King Edward VII. Memorial enlargement.

Southend-on-Sea.—Two bungalows, Cliffsea Grove, for Mr. F. W. Goldsworthy.

Two bungalows, Eastwood Lane, for Mr. H. Lummis. Business premises, The Broadway, High Street, for Messrs. Teller & Goldberg.

Two cottages, North Avenue, for Mr. J. Ward.

Two houses, Cumberland Avenue, for Mr. W. Brand.

Eleven houses, Fairmead Avenue, for Mr. R. J. Snell.

Two houses, Fleetwood Avenue, for Mr. M. Kempen.

Two houses, Hainault Avenue, for Mr. A. J. Cross.

Six houses, Hainault Avenue, for Mr. T. Ridd.

Seven houses, Macdonald Avenue, for Messrs. Wells & Barham.

Eight houses, Porter's Grange Avenue, for Mrs. E. J. Adams.

Seven houses, Fairfax Drive, for Mr. C. Young.

Two houses, Northview Drive, for Mr. W. T. Wilson.

Three houses, Westcliff Park Drive, for Mr. Kibbey.

Six houses, Westcliff Park Drive, for Mr. Whitby.

Two houses, Somerville Gardens, for Messrs. Wray & Cobb.

House and garage, Ailsa Road, for Mr. S. Adams.

House, Cobham Road, for Mr. F. Poole.

House, Cossington Road, for Mr. A. J. Bond.

Two semi-detached houses, Fermoy Road, for Messrs. J. Sumner & Co.

House, Lonsdale Road, for Mr. P. Stanton.

Two houses, Westborough Road, for Mr. R. G. Rudd.

Conversion of house into shop. No. 59 Leigh Road East, for Mr. Cox.

House and shop, Bournemouth Park Road, for Mr. J. Sears.

House and shop, Westborough Road, for Mr. A. E. Rudd.

Houses and shops, corner of West Road and Westborough Road, for Mr. R. Alabaster.

Houses, shop, and stabling, Westborough Road, for Mr. T. Heal.

Five houses, Beaufort Street, for Mr. T. Matthews.

Parish Hall, Leigh Road, for the clergy of St. Michael's and All Angels.

Theatre, Leigh Road. for Raymond Animated Picture Co.

GLOUCESTERSHIRE.

Bristol.—(Supplementary to July 12.) Fine Arts Academy: alterations. Mr. S. S. Reay, F.R.I.B.A. (Messrs. Silcock & Reay, of Bath), architect.

Kingswood.—Picture Hall, Regent Street.

Long Ashton.—University of Bristol Agricultural Institute: additions and alterations (£10,000).

Tewkesbury.—Girls' High School: additions and alterations.

Winchcombe.—Workhouse: alterations (£2,100).

HAMPSHIRE.

Basingstoke.—Cemetery buildings. Mr. J. Harris, contractor.

Bournemouth.—Infectious diseases hospital: accommodation (£1,500).

KENT.

Beckenham.—Three houses, Oakwood Avenue, for Mr. J. Andrews.

Two houses, Stanley Avenue, for Messrs. J. Copland & Son.

Lodge, Kelsey Park, for the U.D.C.

LANCASHIRE.

Bolton.—Picture palace, Blackburn Road, for Mr. W. F. Bowen.

Congregational School, Derby Street: alterations.

St. Edmund's Catholic School, St. Edmund Street. Mr. T. E. Smith, architect.

Turton.—Weaving shed for 400 looms for the Mill Building Limited Liability Company (£12,000).

LEICESTERSHIRE.

Market Harborough.—Board of Guardians: Children's Homes.

LINCOLNSHIRE.

Gedney.—Working-class dwellings.

Woodhall Spa.—Farm buildings, near Manor House, for Mr. S. V. Hotchkiss.

Cottage, Stixwold Road, for the National Service Pensioners' Freehold, Ltd.

Pair of Cottages, Witham Road, for Messrs. Kirkby & Pycroft, Ltd.

MONMOUTHSHIRE.

Caerleon.—Monmouthshire Training College.

NORFOLK.

Norwich.—Municipal Offices, Fish Market site (£12,800). City engineer.

NORTHAMPTONSHIRE.

Ravensthorpe.—Pumping station: extensions. Also cottage for the Northampton Corporation.

SOMERSET.

Corston.—Church Hall and Institute.

Taunton.—St. James' Church: restoration (£650).

Weston-super-Mare.—Cinematograph theatre, Waterloo Street, for Mr. F. Aldridge.

Electric theatre (conversion). Mr. P. G. Fry, architect.

STAFFORDSHIRE.

Bilston.—Council school, Princes End, Coseley.

SURREY.

Epsom.—Lunatic Asylum.

Walton-on-Hill.—House for Rt. Hon. D. Lloyd George, M.P.

SUSSEX.

Brighton.—Theatre, Holland Road, Hove, for the National Education Amusement Company, London.

Burgess Hill.—Southdowns Hydro Hotel: new wing.

Crowborough.—Garage and two cottages; also

Lewes.—Alterations to two houses; also

Rottingdean.—House; also

Seaford.—Three houses. Mr. R. H. Halls (of Lewes), architect.

Shoreham.—Council Schools, Swiss Gardens.

WILTSHIRE.

Potterne.—Twelve cottages for the Devizes R.D.C.

YORKSHIRE.

Bradford.—Two blocks of single-room dwellings, Longlands area. City architect.

Test Workhouse, Daisy Hill. Mr. F. Holland, architect.

YORKSHIRE—continued.

Bridlington.—Twenty-five workmen's cottages (£4,700).

Halifax.—Wesleyan Chapel, West End. Messrs. Longbottom & Culpin, architects.

Ilkley.—King's Hall: Annex. Council surveyor.

Penistone.—Council Offices and Public Hall (£3,500).

Sheffield.—Eyre Memorial Church, Newhall.

Silsden.—Council School. Education architect (County Hall, Wakefield).

WALES.

Clydach.—Mond Nickel Silver Works: extensions.

Denbigh.—Markets, public hall, fire brigade station, &c. Messrs. Porter & Elcock (of Colwyn Bay), architects.

Llanengrad.—Council School: additions and alterations.

Mr. J. Owen, F.R.I.B.A., (of Menai Bridge), County architect; also

Menai Bridge.—Council school.

Port Talbot.—Theatre, Exchange, shops, and offices. Mr. B. Jones (of Swansea), architect.

Swansea.—Six mills, King's Dock, for Messrs. Baldwin & Co.

Tinplate Warehouse, King's Dock, for the Harbour Trust (£2,000).

SCOTLAND.

Aberdeen.—Public School, Ashley Road: extension. Mr. J. A. O. Allan, architect.

Buckie.—House, West Street. Mr. W. Hendry, architect.

Cockburnspath.—School. Messrs. Gray & Boyd (of Berwick-on-Tweed), architects.

Edinburgh.—University: Department of Forestry, Agriculture, and Entomology: buildings (£12,000).

Fraserburgh.—Additions and alterations in Mid Street. Mr. W. E. Gauld, A.R.I.B.A., architect.

Leith.—Picture theatre for 2,000 seatings, Duke and Constitution Streets.

IRELAND.

Farran.—House. Mr. J. D. Leahy (of Newcastle West), architect.

Shangarry (Co. Carlow).—Medical Officer's house; also dispensary. Guardians' engineer.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 11,375. May 11, 1911.—Improvements in or relating to carburetting apparatus. J. H. Hopkins, 38 Cooke Street, Old Trafford, Manchester, and A. M. Stansfield, 31 Broom Lane, Levenshulme, Manchester. This invention relates to improvements in apparatus for manufacturing gas from petrol or kindred spirit, adapted to give a continuous supply of gas and an equally continuous supply of air for use in the manufacture of such gas. The apparatus is used in connection with a Robinson type of hot-air engine or a hot-air engine having a trunk piston. An air-compressing chamber is employed in direct communication with the open end of the cylinder, and surrounding the main working parts of the engines. Fig. 1 is a front elevation. Fig. 3 end elevation partly in section from the left hand end of the apparatus. The engine, *a*, has an air-compressing chamber, *b*, forming part of the bed, *c*, of the engine, such chamber being located close to the open end of the trunk piston, *d*. The chamber also surrounds the driving or fly wheel shaft, *e*. The air inlet valve, *f*, and the air outlet valve, *g*, are of the self-weighted type. The air inlet valve *f* communicates from the air-compressing chamber *b*, with a smaller chamber, *h*, provided with an attachable connection, *i*, for the admission of air, the outer end of such connection being provided with a filtering cloth wire gauze, *j*. The air outlet valve, *g*, from the air compressor, *b*, allows the air to pass to a baffling device to give even pressure and flow of air to the carburettor, *k*. The device consists of a tubular structure comprising two or more tubes, two being indicated in fig. 3, one of which, *m*, may be plain and the other, *n*, perforated. The tube *m* is in communication with a small chamber, *o*, arranged above the outlet valve, *g*. The trunk piston, *d*, is coupled by a rod, *q*, to links, *r*, which, in turn, are connected to crank disc 4 and to a lever, *s*, pivoted at its opposite end to the top of the cylinder *u*. The lever *s* is coupled by link *t*, pivoted at *v* to a rod, *w*, connected to a diaphragm

located in the vertical tubular structure, *x*, below which is situated a circular chamber, *y*, provided with a hole, *z*, at its bottom side, through which a gas burner, 2, passes so as to allow its flame to be diffused against a metal dish, 3, located within the chamber *y*. The heated air in the structure *x* is conducted by a suitable passage to the cylinder *u* behind the piston *d*. 4 is the fly-wheel of the engine on the

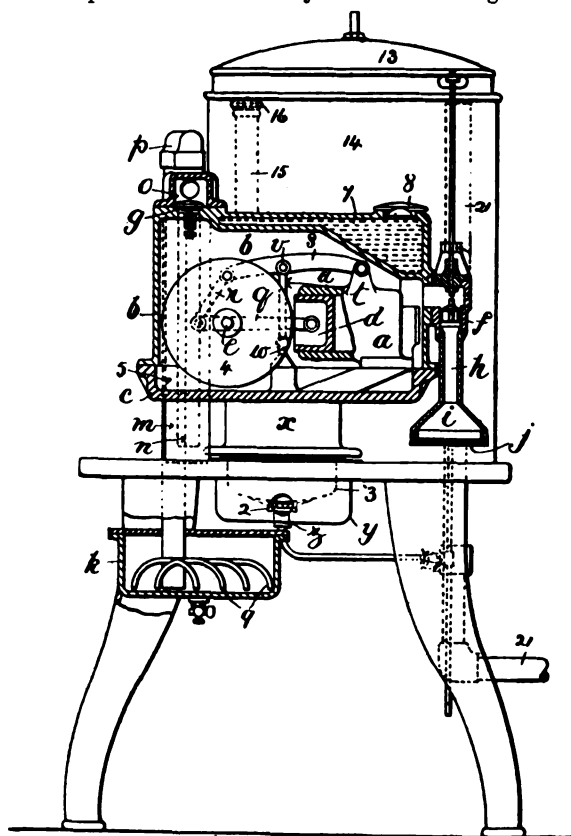


Fig. 1

shaft *e*. The compressing chamber, *b*, is for the purpose of compressing air and forcing it into the carburettor *k*, so as to become intimately associated with the petrol. The fly-wheel, 4, is adapted to run in an oil bath, 5, formed in the

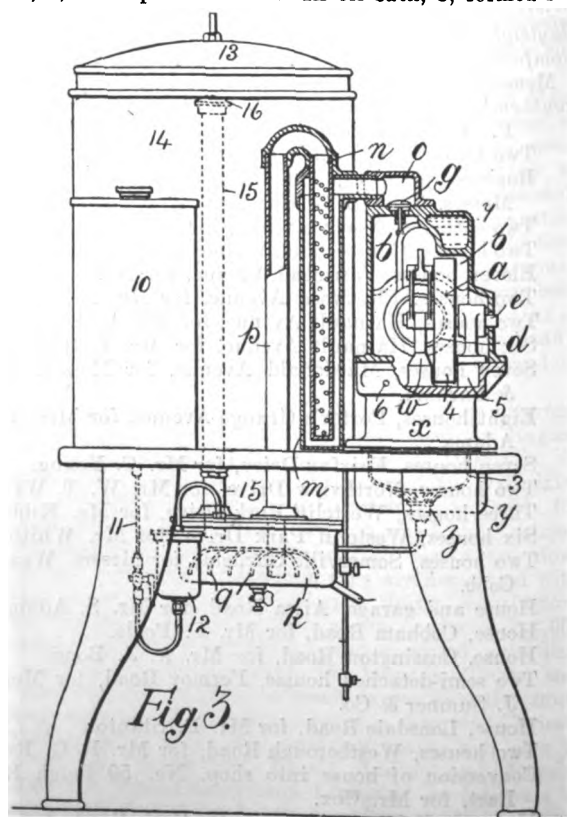


Fig. 3.

base or bed, *c*, of the engine, and 6 is a plug connected with the oil bath to enable the height of the oil to be regulated as desired. The revolution of the fly wheel causes oil to be

picked up and to be splashed on the working parts of the engine located within the compressing chamber *b*, and in order to keep such working parts cool the chamber may be surrounded by a water-jacket, *7*, which may be filled through the plug hole, *8*, at its upper side. The discharge end of the air pipe, *p*, has a number of short outlet branches, *9*, adapted to dip into the petrol contained within the carburettor chamber. The outlets of these pipes distribute the air throughout the whole body of petrol. The petrol is supplied to the carburettor from the cistern or tank, *10*, by way of a valve-controlled pipe, *11*, and float chamber, *12*, these parts being of the usual type. *13* is the gasometer bell, *14* the water tank or chamber within which it is located, *15* a gas pipe connected with a carburettor, *k*, and passing towards the upper portion of the bell, *13*, where it is provided with the usual back pressure valve, *16*, to prevent the gas being forced back into the carburettor. An ordinary gas supply pipe, *21*, communicates with the gas burner service. June 19, 1912.

PATENT SPECIFICATIONS PUBLISHED JULY 18, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 14,791. June 26, 1911.—Alfred Phillips, Claremont, Goldthorn Hill, Wolverhampton. Moulding machines.

15,099. June 28, 1911.—F. G. Lynde, "Woodside," London Road, Knebworth, Herts., and E. R. Calthrop, Eldon Street House, Eldon Street, London. Construction of sea walls, piers, pontoons, floating stages, foundations, and other structures.

15,639. July 5, 1911.—A. E. Lamkin, 226 Mitcham Road, Croydon, Surrey. Heating kitchen ranges and the like by gas.

15,870. July 8, 1911.—Mrs. M. E. Cambell, Walter Cambell, architect, and Alexander Pryde, all of 22 Springfield Road, Gatley, Cheshire. Construction of domestic hearths.

16,906. July 24, 1911.—Bertram and Eustace Thomas, Worseley Street, Hulme, Manchester, and E. M. Holme, Beech House, Adwood Lane West, Stockport. Electrically operated cranes or other raising and lower machinery.

16,989. July 25, 1911.—D. E. Davies, Volvac Works, Highgate Road, Birmingham. Appliances for cleaning by vacuum.

17,608. Aug. 2, 1911.—F. G. S. Ham, 13 Grosvenor Road, Westminster. Apparatus for use in sweeping up or scavenging roads, paths, &c.

18,153. Aug. 10, 1911.—C. J. Harvey and the Harvey Pneumatic Cleaners Co., Ltd., 11 High Street, Kidderminster. Operating mechanism of vacuum cleaners or dust extractors of the type employing two or more exhausters.

19,183. Aug. 26, 1911.—C. O. Stinebaugh, 2952 First Avenue South, Seattle, King, Washington, U.S. Cement compositions for making concretes and the like.

19,235. Aug. 28, 1911.—Date claimed under International Convention Nov. 29, 1910. Soc. Drouard Freres, 2 bis Boulevard Jean d'Arc, Rouen, Seine Inferieure, France. Stone-breaking machines.

19,682. Sept. 4, 1911.—C. E. Rose, 861 Ninth Street, San Diego, California, U.S. Door gauges.

20,158. Sept. 11, 1911.—R. W. O. Coombs, 110 Stamford Hill, N. Plug taps or cocks.

20,587. Sept. 18, 1911.—G. T. Money, 16 Leatherdale Street, Globe Road, Mile End Road, E. Safety guard for the cutters of wood moulding machines.

20,629. Sept. 18, 1911.—John Algermisen, St. Paul, Missouri, U.S. Revolving chimney top.

20,772. Sept. 20, 1911.—J. E. Flynn, Norman Road, Birkby, Huddersfield. Chimney pots and ventilator shafts.

21,262. Sept. 26, 1911.—Arthur Bing, rue St. Sebastien, Paris. Burglar alarm device.

21,301. Sept. 27, 1911.—T. A. Helm, 4 Leaver Street, Rosegrove, near Burnley, Lancaster. Fastenings for the doors or gates of yards.

22,318. Oct. 10, 1911.—H. J. Cowell, 14 Leonard Street, City Road, E.C. Fire escapes.

24,055. Oct. 31, 1911.—W. D. Kelly, 6222 Winthrop Avenue, Chicago, Cook, Illinois. Wood working machine.

24,631. Nov. 6, 1911.—P. R. Seamon, 137 Hutchings Street, Roxbury, Boston, Suffolk, Mass. Automatic gas lighting and extinguishing apparatus.

26,805. Nov. 30, 1911.—G. E. Montagnon, 83 Malpas Road, Brockley, S.E., and Frederick Atkinson, 49 Queen

Victoria Street, E.C. Fireproof floors and partitions constructed in reinforced concrete.

142. Jan. 2, 1912.—Date claimed under International Convention Jan. 2, 1911. J. von Vass, 11 Reichenbachstr., Dresden. Methods of and means for raising and forcing semi-fluid mixtures of materials, such as cement, lime, and the like.

2,483. Jan. 31, 1912.—G. W. Drummond, The Bayham Moulding Works, 53a Bayham Street, Camden Town, N.W. Guards of moulding and like machines.

3,815. Feb. 15, 1912.—James Farley, Cecil House, Hertford. Distribution of sewage.

4,770. Feb. 26, 1911.—C. H. Triggs, 64 Teignmouth Avenue, Earls Court, York, Ontario. Window sashes.

5,082. Feb. 29, 1912.—W. N. Jones, Dyffryn, Ammanford, Carmarthenshire; J. R. R. Thomas, 73 Wind Street, Ammanford, Carmarthenshire; Percy Lloyd, Patent Works, Ammanford, Carmarthenshire; and J. F. Burns, Bellevue House, Station Road, Ystradygynlais, Brecknockshire. Manufacture of bricks.

6,255. March 13, 1912.—Date claimed under International Convention March 14, 1911. Frederick Oppenheim, 73 St. George's Square, Westminster. Shelf supports.

6,955. March 21, 1912.—J. H. Nicholas, 5 The Villas, Sudbrook, near Chepstow, Mon. Sanitary equipment for earth closets.

7,297. March 25, 1912.—Robert Hudson, Gildersome Foundry, near Leeds. Glazing and ventilating of buildings or structures.

13,012. June 3, 1912.—L. F. Thompson, Clinton, Iowa, U.S. Shovel handles.

NEW CATALOGUES.

MESSRS. OZONAIR, LTD., 96 Victoria Street, Westminster, S.W., have prepared a new edition of their catalogue No. 1 "Ozonair Apparatus for General Purposes." Its twelve pages contain illustrations, prices, and other particulars of Ozonair portable generators capable of purifying the air in rooms of from 3,000 to 12,000 cubic feet capacity, for connecting the supply circuits or to portable accumulators. These apparatus are made in a variety of patterns, for standing on the table, for fixing on the wall, with medical fittings, &c. The consumption varies from only 10 watts to 130 watts, so that in all cases where intended for use on a supply circuit they can be connected to any lampholder or plug. The makers claim that their Ozonair apparatus, as compared with other methods, are noiseless, and generate pure ozone free from the oxides of nitrogen. Interesting information is included regarding the nature of ozone and the many public and industrial purposes to which the apparatus can be applied. That these uses are not hypothetical is proved by a list of important users in many different parts of the world, comprising public buildings, breweries, slaughter-houses, cold storage, water-works, laboratories, and so on. Messrs. Ozonair, Ltd., will be pleased to send a copy of the catalogue to anyone interested in the subject.

A concise handbook has recently been issued by Fredk. Braby & Co., Ltd., Glasgow, which should prove extremely useful to those interested in the iron and steel building trade, and serve as an excellent supplement to their large illustrated catalogue, of which a new edition was published this year. The "Eclipse" iron and galvanising works and steel sheet rolling mills occupy a large area in Petershill Road, with their many departments and shops, and of these some interesting views are given. The range of manufactures includes wrought-iron and steel buildings of every description, hot-water cylinders, and wrought-steel windows and gutters. A special feature is made of Braby's galvanised corrugated sheets, which have earned a wide reputation. The handbook contains a very considerable amount of information which is essential to architects concerning the weights, specific gravity and fusibility of zinc and iron, as well as illustrations of the many products of this firm. Another prominent feature of this catalogue deals with Braby's steel and gun-metal casements and sashes. These are made to almost any size and design, and are guaranteed waterproof under all conditions.

THE object with which Thomas Faldo & Co., Ltd., Effingham House, Arundel Street, W.C., put forward their small twelve-page booklet, "A Few Simple Facts about Asphalte," are frankly set forth in their own foreword. It runs as follows: "This little book is published, primarily and particularly, for the information of buyers and users of asphalte, to help architects, engineers, surveyors, and others in the selection of the best description of asphalte for any

purpose; also in the hope that it may bring us more business. We realise that asphalt is an article about which little is known to most users, so we have tried to cover the subject thoroughly, yet briefly." Messrs. Faldo are not mine-owners, but they have direct, and in some cases exclusive, contracts with the various mines; and they manufacture almost every kind of asphalt in their own works at Rotherhithe, including British, Special British, Acid-resisting, Seyssel, Limmer, and Refined Trinidad Bitumen. Asphalt is divided into two classes—viz. Foreign and British. The first is a natural product; the second is a manufactured article sold at about half the price. Messrs. Faldo say that British asphalt, if properly made, cannot be surpassed for such work as damp courses; and when they advise its use they are always willing to give a written guarantee. The firm, however, are in a position to supply genuine Seyssel, Limmer, or other foreign asphalt, as they are to supply British made by their own patent process. Their work has behind it the not inconsiderable force of sixty years' reputation, gained in many different parts of the country. Included in this booklet will be found a variety of instructive and valuable information, which should clear up many common misconceptions.

MESSRS. MATHER & PLATT, LTD., Manchester and London, are the original makers of turbine pumps, and have now had over thirty years' experience with them. Since the first patent was taken out in 1875 there have been, of course, striking developments, and the turbine has made unceasing inroads into the former monopoly of the centrifugal pump. The world-wide known firm have recently issued a new turbine pump catalogue, which admirably indicates the diverse applications of Professor Reynolds' patent. These include sanitary, fire and marine services, power auxiliaries, waterworks, colliery and mining, and many industries. The pumps have been made for quantities up to 15,000 gallons per minute, for heads up to 1,600 feet, and for speeds up to 3,000 revolutions per minute.

THE BRITISH FIRE PREVENTION COMMITTEE'S SUMMER MEETING.

THE British Fire Prevention Committee commenced its two-day summer meeting on Wednesday morning at its Regent's Park Testing Station with some important high-temperature fire tests on a reinforced concrete floor and on six sets of electro-glazed casements.

There was a large attendance of members and subscribers, and a number of visitors, including Chief Officer Troje, representing the Prussian Fire Service Council, while the Admiralty, War Office, Home Office, and other Government Departments, as also the London County Council and several municipal and similar authorities were represented by their principal officials concerned, together with a number of railway and insurance companies.

The members and visitors were received by the Earl of Lonsborough, K.C.V.O., Sir Henry Tanner, C.B. (H.M. Office of Works), Sir James Szlumper, M.Inst.C.E., Mr. Edwin O. Sachs, F.R.S.Ed. (Executive Chairman), Mr. Horace Folker, F.A.I. (Hon. Treasurer), and other members of Council, and the testing operations were conducted by strong Sub-Committees under the general direction of Mr. Ellis Marsland (General Hon. Secretary).

The arrangement of the reinforced concrete floor test has awakened considerable interest, as it is the first occasion that a floor of this type, reinforced solely with a mesh reinforcement (a triangle mesh), was under official review, and the question of whether for such floor with mesh reinforcements a lesser amount of protective covering would suffice is a much-discussed problem from the fire point of view.

Again, the arrangement of the test with electro glazing of the so-called "Chadrac" type has awakened great interest, seeing that the "Copperlite" type, which was recently tested, had obtained a very high record, and that other makers are also testing to the same high standard.

As to the results of the first day's test they will be published in the usual illustrated reports of the Committee in due course.

As we go to press the second day's testing operations are in hand, when another form of electro glazing is under review—i.e. "Luxfer" glazing, and some Belgian double reinforced concrete doors. The "Luxfer" glazing, it should be mentioned, had been tested to the earlier standards some time back.

TRADE NOTES.

THE "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Baptist Church, Broadstairs.

THE Bishop Eton Monastery, Woolton, is being supplied with Shorland's patent exhaust roof ventilators by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

MESSRS. J. WRIGHT & Co., of South Western Works, New Malden, Surrey, and Crown Chambers, Regent Street, S.W., have appointed Messrs. Ellis, Partridge & Co., of Grey Friars, Leicester, sole agents for the county of Leicestershire for the sale of their partitions (hollow and solid fixing blocks) for walls, tilehanging, and for floors on concrete, &c. Messrs. Ellis, Partridge will hold stocks, and be thereby enabled to supply on demand.

VARIETIES.

THE Eastern District Committee of the Haddingtonshire County Council have decided to provide a new water supply for Innerwick, and steps are now being taken to have the scheme carried out.

SIR CHARLES ASSHETON-SMITH has made a liberal offer regarding the building of workmen's dwellings in a district adjoining Dinerwic Quarries, Carnarvon, of which he is the owner, to obviate the necessity of the District Council carrying out a building scheme. Sir Charles is prepared to sell to individuals a plot of freehold land provided not less than twenty houses are erected upon it. The price asked is £3 per house, or 4d. a yard, provided that the plans and construction of the buildings are approved of by the local rural council.

A LOCAL GOVERNMENT BOARD inquiry was held at the Castle of Winchester last week by Mr. H. R. Hooper, M.I.C.E., into an application to borrow sums of £171,009, £136,808, and £49,600 by the Hants County Council, the borough of Southampton, and the borough of Bournemouth respectively, being their respective portions of the cost of erecting a joint asylum at Park Brewett, Sherborne St. John, near Basingstoke. The reason for the erection of the new asylum is the overcrowded state of the Fareham institution. Mr. Neville Hine attended on behalf of the architects of the new buildings.

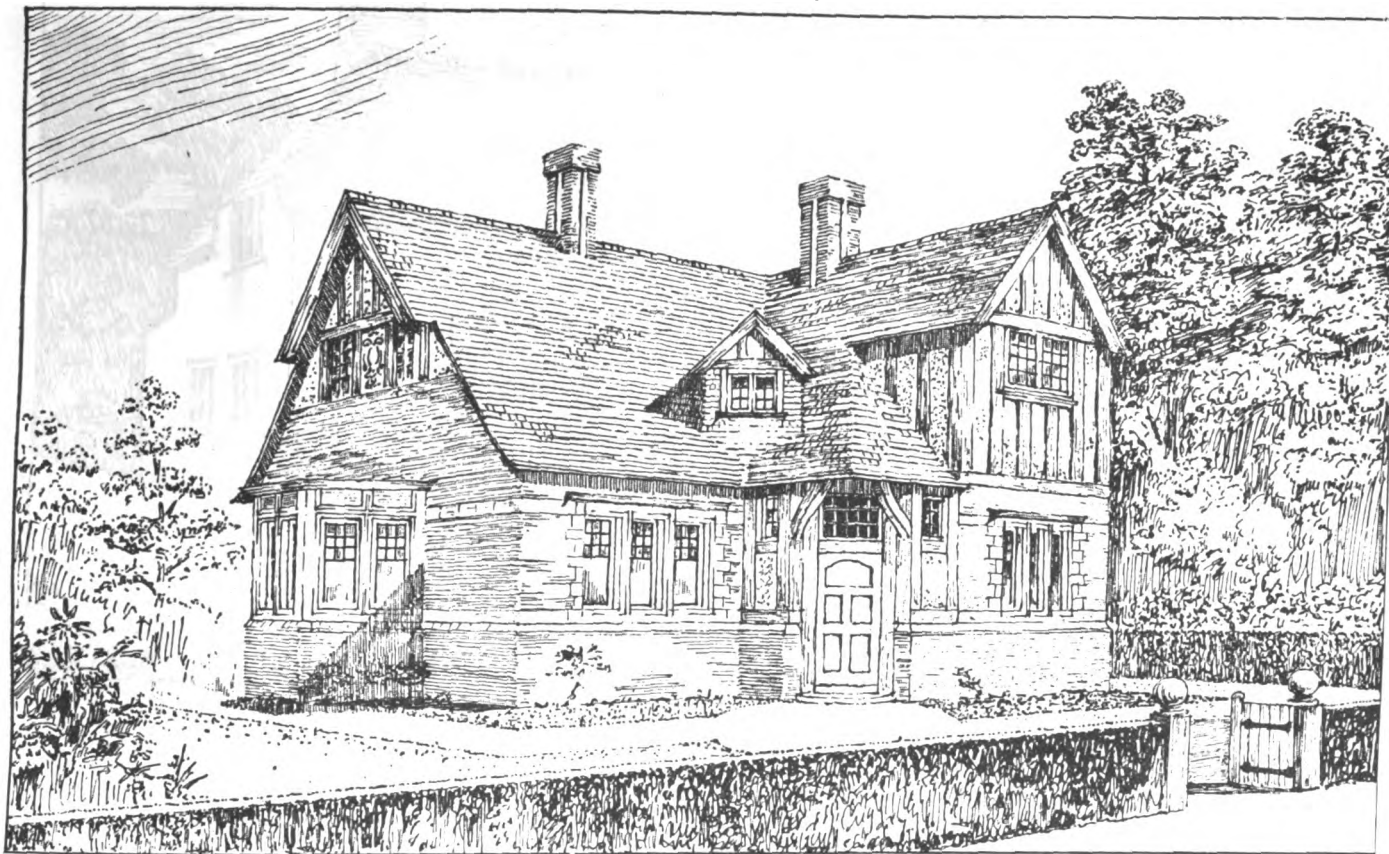
RETURN tickets at reduced fares, available for fourteen days, will be issued to Brussels, via Harwich and Antwerp. Passengers leaving London in the evening reach Brussels next morning, after a comfortable night's rest on board the steamer. For visiting Holland special facilities are offered by the British Royal Mail Harwich-Hook of Holland route. From the Hook of Holland through carriages and restaurant cars are run to The Hague and Amsterdam in the North and South German express trains to Cologne, Bale, Hamburg, Halle (for the Harz Mountains), Dresden, and Berlin. The Danish Royal Mail steamers of the Forende Line of Copenhagen will leave Harwich for Esbjerg on August 2 and August 3. The General Steam Navigation Company's steamers will leave Harwich for Hamburg on Wednesday, July 31, and August 3. The Swedish Royal steamer will leave Harwich for Gothenburg on Saturday, August 3.

SPECIAL excursion tickets will be issued by the South Eastern and Chatham Railway to Paris by the services leaving Charing Cross at 10 A.M. and 2.10 P.M. on August 1, 2, 4, and 5, and at 10 A.M. and 2.50 P.M. on Saturday, August 3. They will also be issued by the night mail service leaving Charing Cross at 9 P.M. each evening from August 1 to 5, inclusive, returning from Paris any day within fifteen days. Cheap tickets to Brussels by the Calais, Boulogne, and Ostend routes will be issued from July 31 to August 5, inclusive, available for fourteen days. A special service will leave Victoria at 4.55 P.M. for Folkestone, Boulogne, Ste. Cécile, and Le Touquet on Friday, August 2, returning on Tuesday, August 6. A cheap excursion to Boulogne will leave Charing Cross at 2.50 P.M. on Saturday, August 3, returning on Bank Holiday. Cheap return tickets, available for eight days, will be issued at Charing Cross from July 31 to August 5 inclusive. Similar tickets will also be issued to Calais. On Sunday, August 4, and Monday, August 5, special day excursions will be run to Boulogne and Calais. Special cheap eight-day return tickets to Amsterdam and Scheveningen, The Hague, and other Dutch towns will be issued from July 31 to August 5, inclusive. Cheap eight-day return tickets to Ostend will be issued from July 31 to August 5, inclusive. Special cheap tours to the Belgian Ardennes by the Calais, Boulogne, and Ostend routes are also announced. During the holidays the Continental services will run as usual.

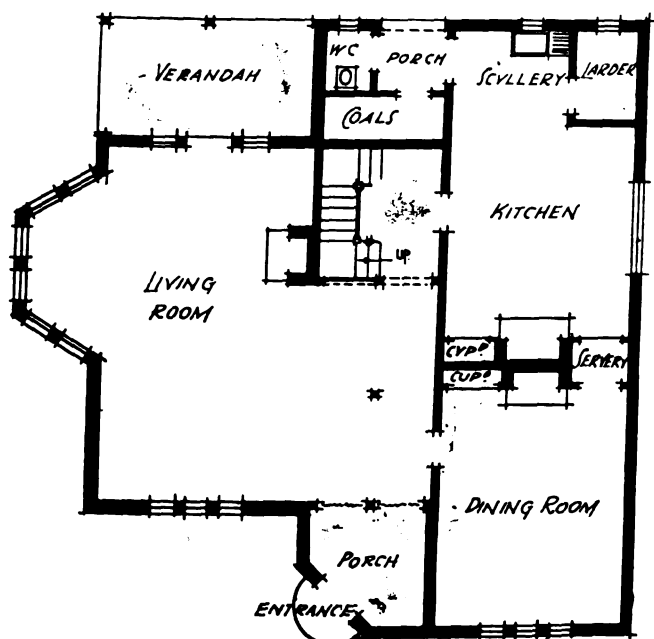
WEEK-END COTTAGES, BUNGALOWS, AND OTHER SMALL HOUSES.

DESIGN NO. 50.

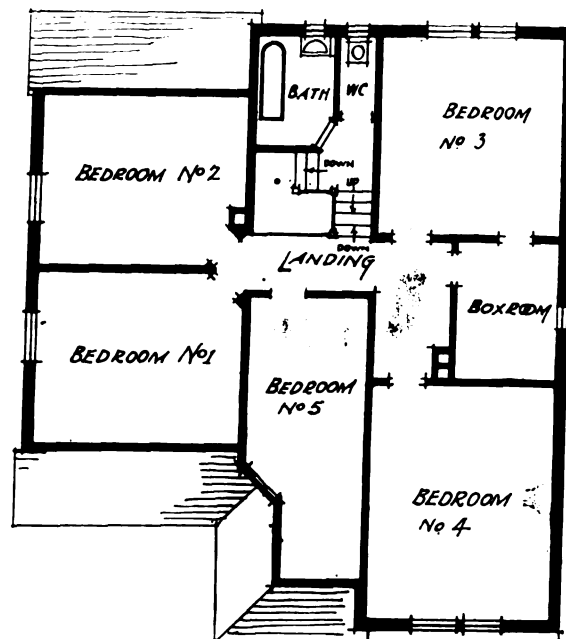
THIS month's special supplement contains a further series of designs of varied plan and treatment, and the Editor of *The Architect* will be pleased to introduce the authors to those who desire to build from these designs or a modification of them.



ENTRANCE FRONT.



GROUND FLOOR PLAN.



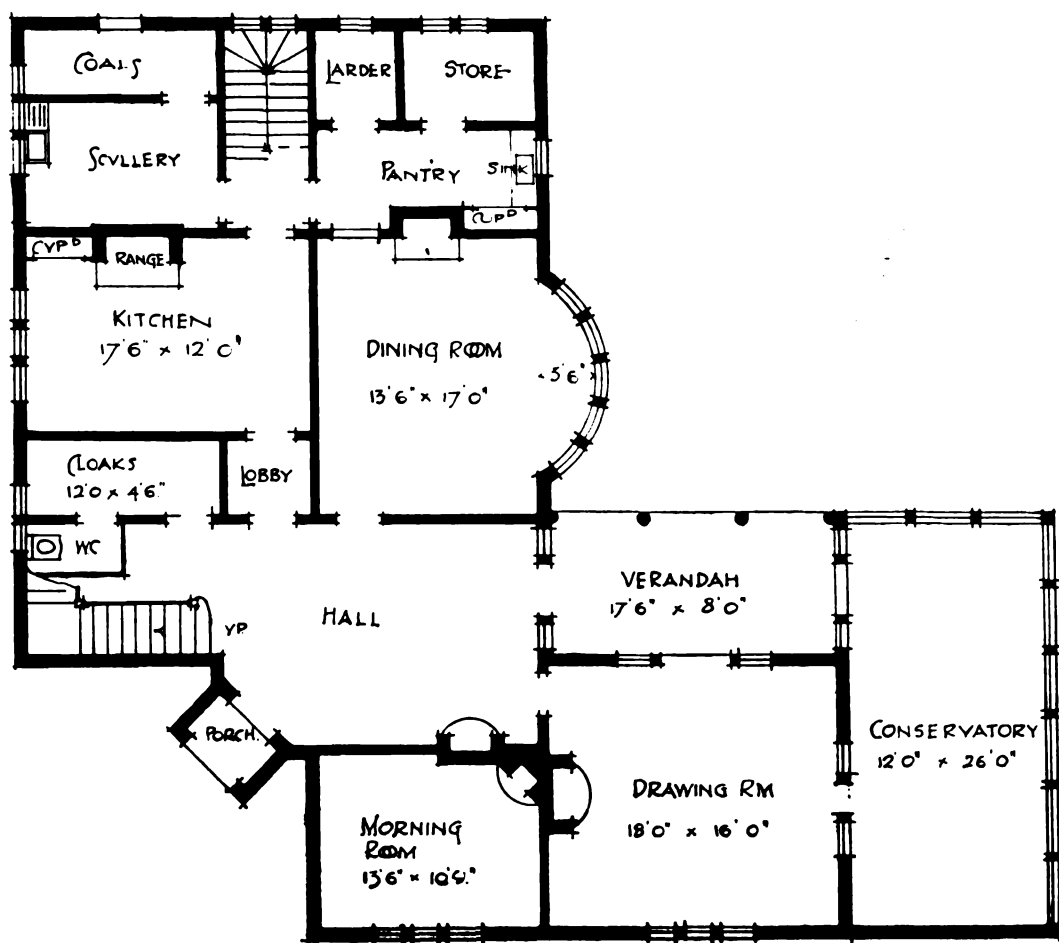
FIRST FLOOR PLAN.

The main feature of this house is the utilisation of as much of the interior space as possible in the living room, which would be exceedingly spacious for the size of the house and would also be very picturesque. By means of curtains it would be possible to close off the thoroughfare and to subdivide the room if desired. At the same time by means of a small servery, communication between kitchen and dining-room is easy without loss of privacy. It is suggested that the bedrooms should be warmed by hot-water radiators, worked from the downstairs rooms. The house is intended to be built of rustic-faced brick with stone bands and dressings, relief being obtained by half-timber above. The roof would be covered with tiles in pleasant low-toned colours. The cost is estimated at £750.

DESIGN NO. 51.



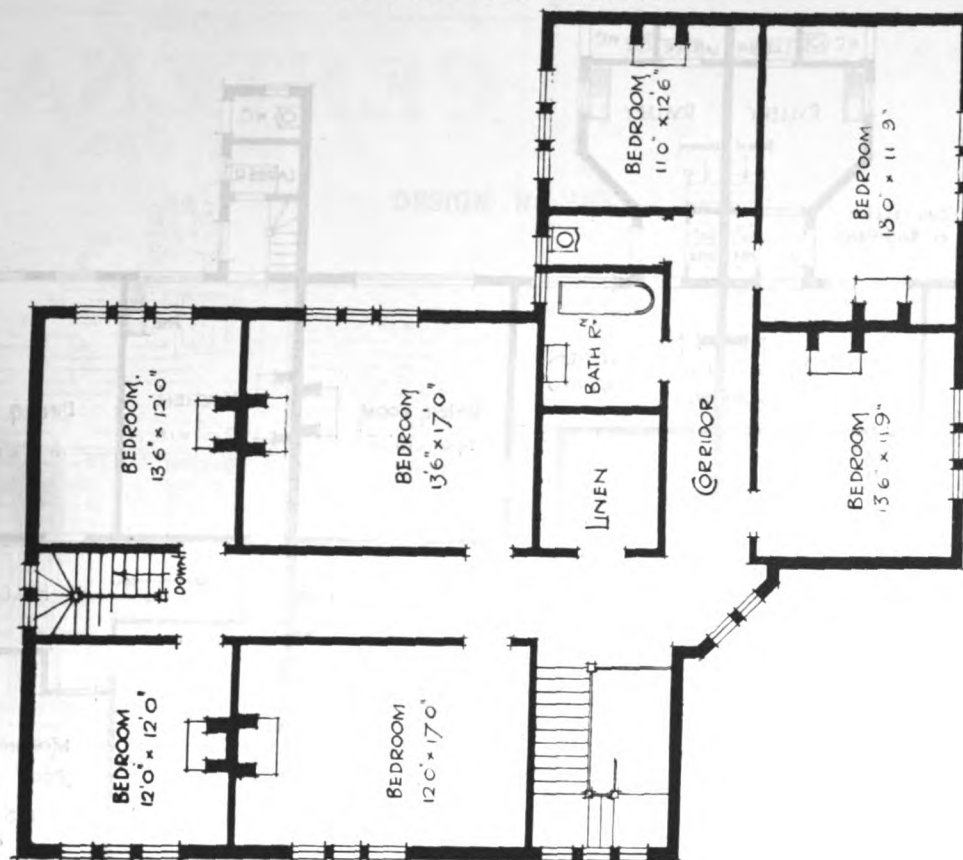
ENTRANCE FRONT.



GROUND FLOOR PLAN.

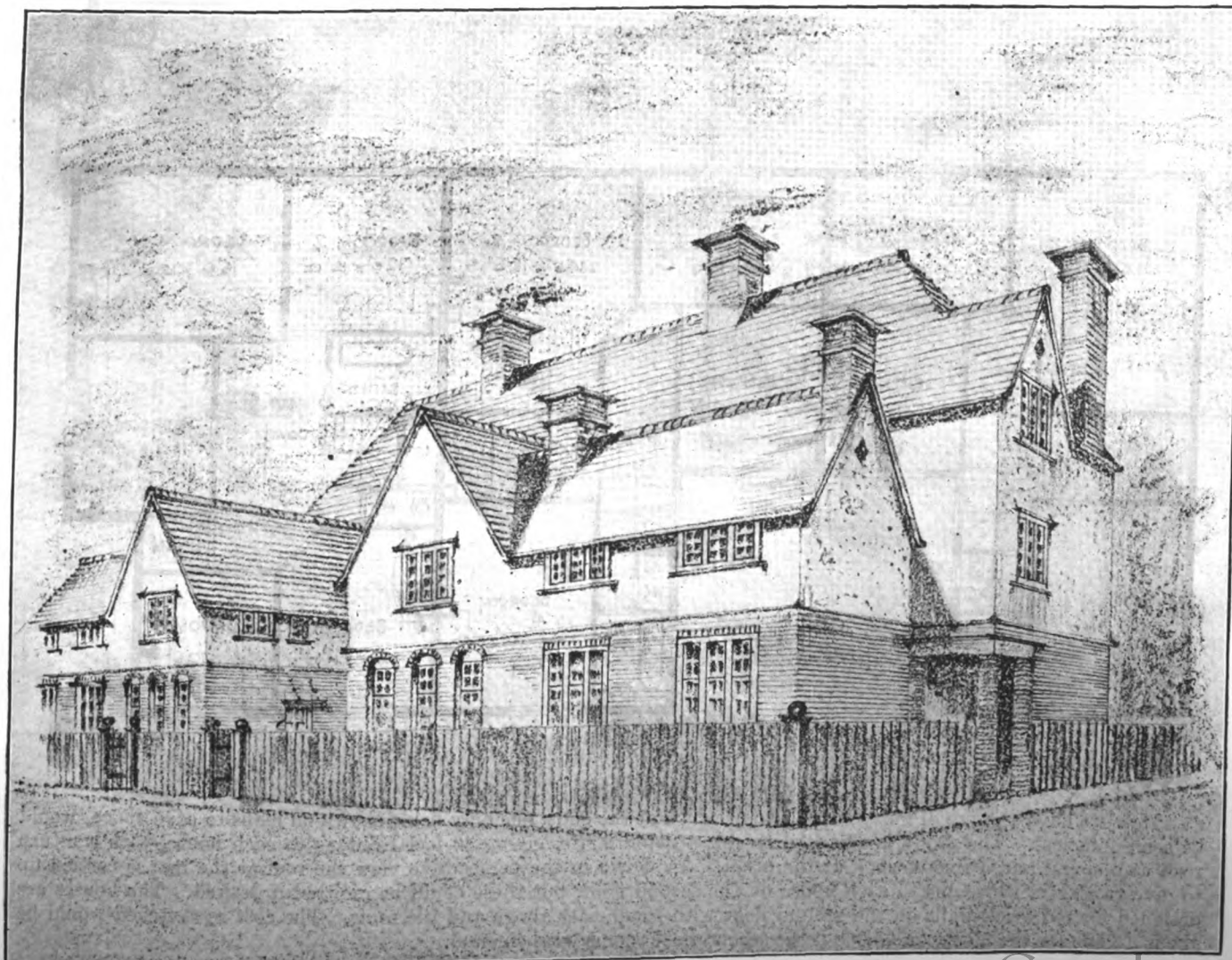
This is a house planned for a corner site, and a large lounge hall virtually makes a fourth reception room to the usual dining, drawing and morning rooms. The kitchen and offices are exceptionally well arranged and a servants' stair and serving pantry make the service quite independent of the living part of the house. The house is intended to be finished externally in rough-cast with purple brick plinth and tile roof. The estimated cost is £1,250, exclusive of the conservatory.

DESIGN NO. 51—continued.



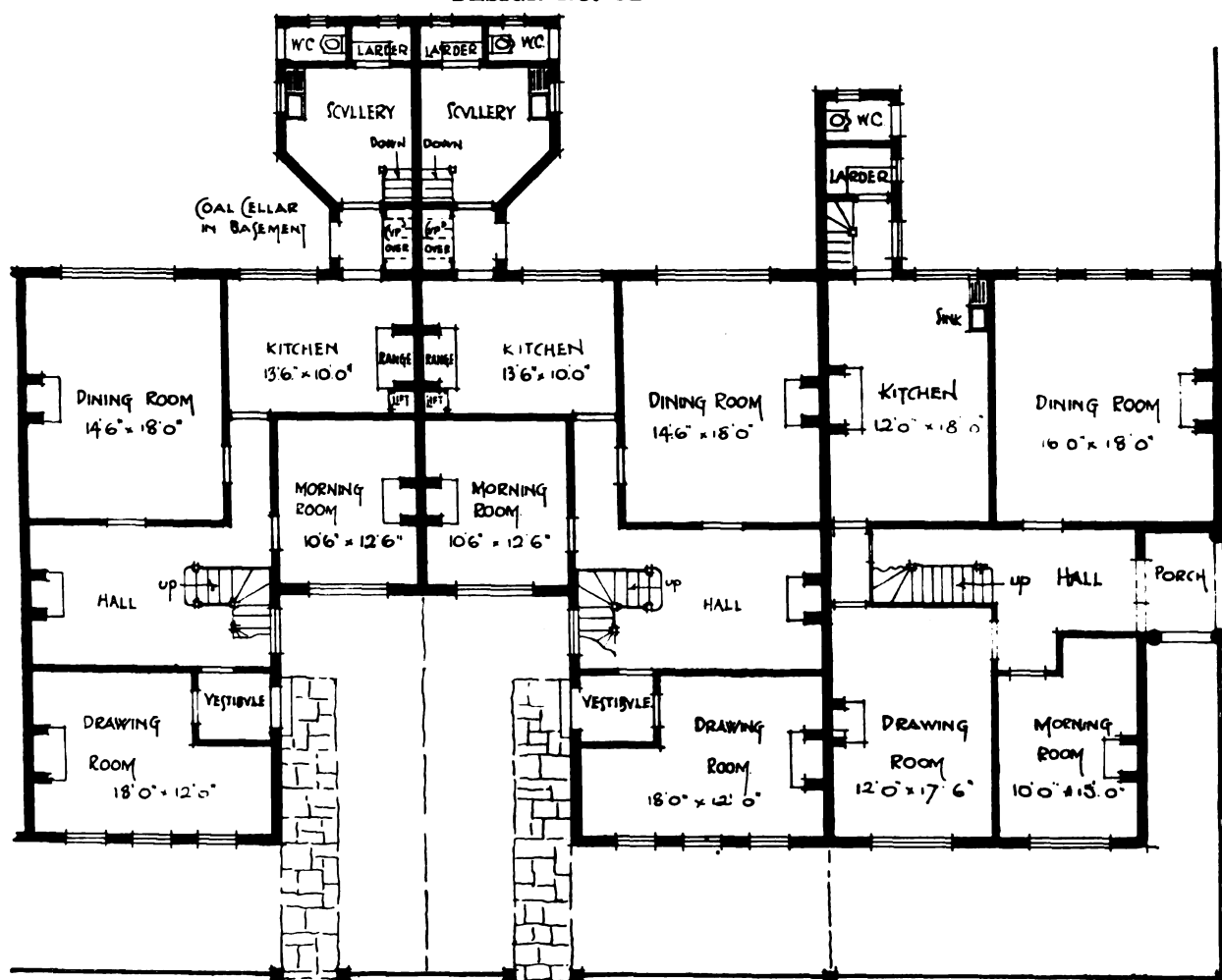
FIRST FLOOR PLAN.

DESIGN NO. 52.

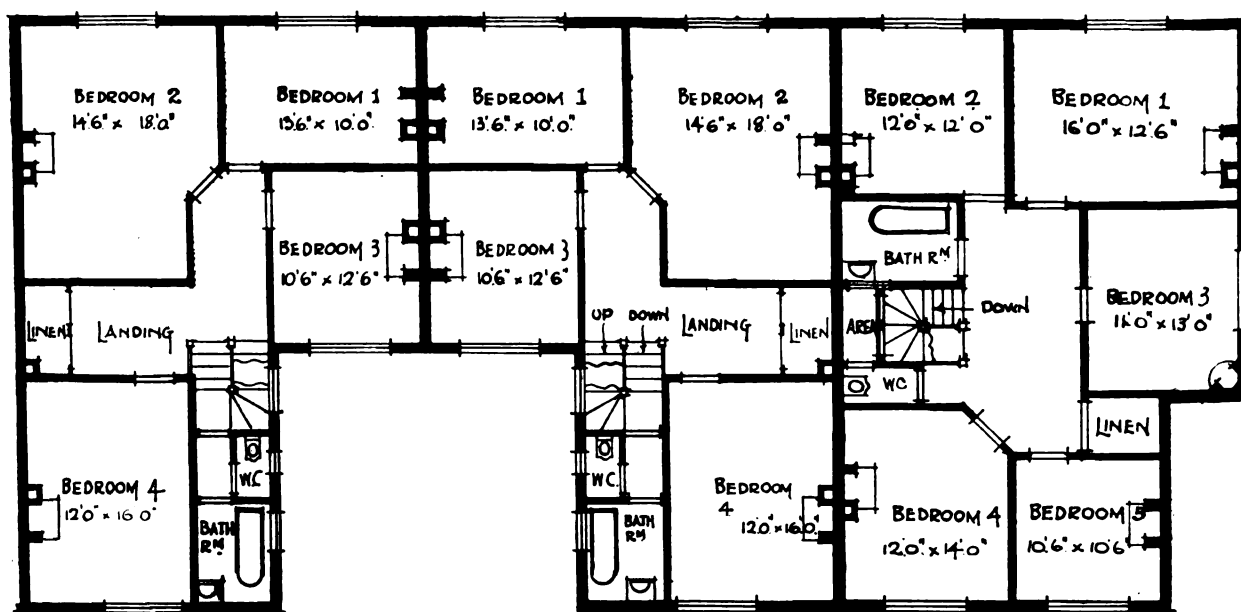


VIEW FROM CORNER OF TWO ROADS.

DESIGN NO. 52—continued.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

Here we have a group of four houses, two of which at the ends, one only being shown on plans to save space, would be semi-detached. The group is arranged to suit a definite site, giving 30 feet frontage to each house, with a return road at one end and a free outlook at the other. As shown in the perspective view the roof at the rear is carried up to give two extra bedrooms to each house on the second floor, but these could be omitted if desired. The houses are designed for red brick walls on the ground floor with rough-cast above and tile roofs. The cost as sketched would be about £3,500 for the block, or £3,000 if the second-floor rooms were omitted.

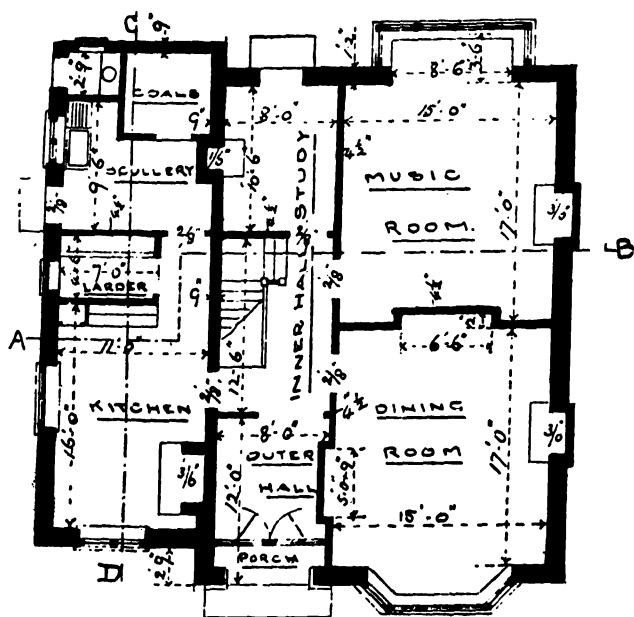
DESIGN NO. 53.



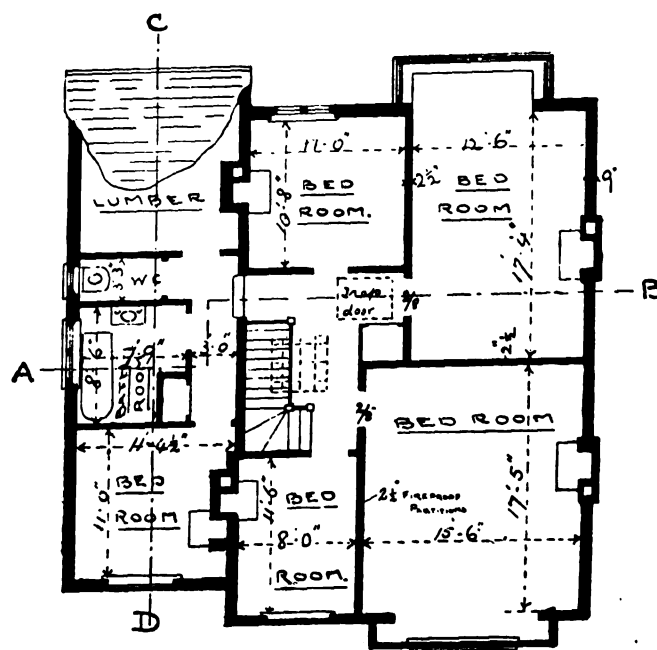
BACK ELEVATION.



FRONT ELEVATION

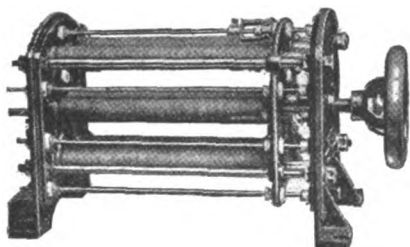


GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

This is a normal type of house with well arranged accommodation, and could be carried out in red brick with Broseley tile roofs for about £1,050.

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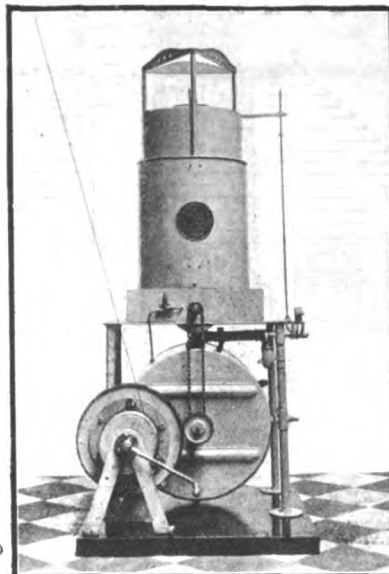
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(1)

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DESIGN NO. 54.



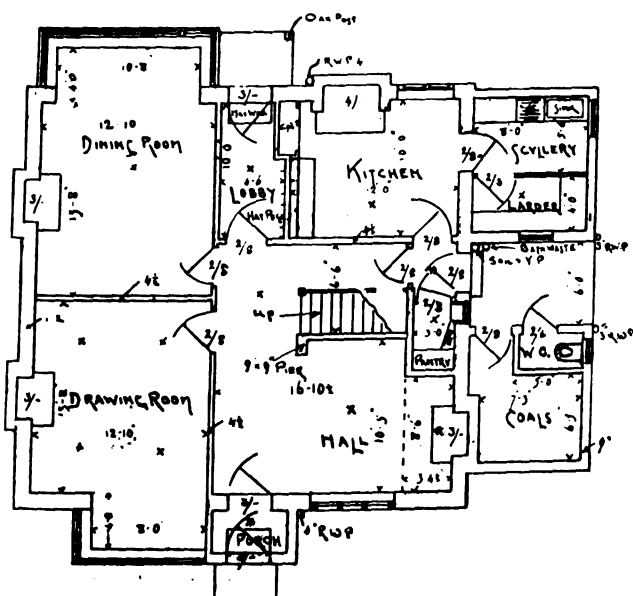
VIEW FROM GARDEN.



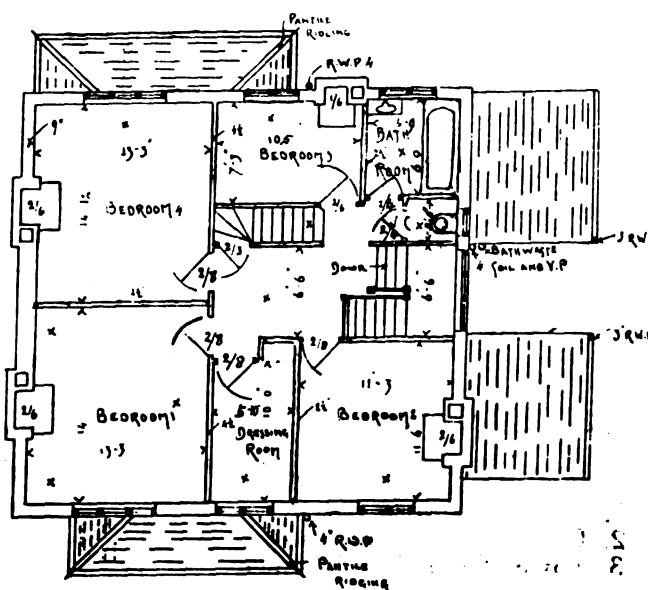
BACK ELEVATION



FRONT ELEVATION.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

This house has been built and the view shows it as finished. The plans explain themselves, and the cost was about £950.

Special arrangements have been made to supply copies of the undermentioned work at the reduced price of 5s. 6d. net, including postage. Orders to be addressed to P. A. Gilbert Wood, 6-11 Imperial Buildings, Ludgate Circus, London, E.C.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

•• As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Oct. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARDIFF.—Aug. 6.—The Corporation invite designs and estimates in competition for a fire brigade station proposed to be erected in Westgate Street, Cardiff. The Corporation have appointed Mr. A. Marshall Mackenzie, architect, to act as assessor. The deposit of £2 2s. will be returned to all architects submitting bona-fide designs or who return the conditions within six weeks. Full particulars of the competition will be sent to the architects on application to Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

(Continued on page 7.)

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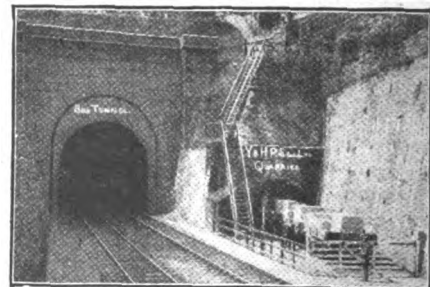
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CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—The Corporation of the City of Glasgow invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

CONTRACTS OPEN.

ABERBEEG.—Aug. 6.—For alterations and additions to Aberbeeg station, Mon., for the Great Western Railway Co. Mr. A. E. Bolter, secretary, Paddington Station, London.

ABERTILLERY.—Aug. 6.—For erection of two shops, Somerset Street, Abertillery. Mr. N. Gasenius Lewis, F.I.A.S., architect and surveyor, Abertillery.

ABERNANT (ABERDARE).—Aug. 10.—For erection of four blocks, comprising thirty-two tenement dwellings, at Abernant, for the Aberdare Urban District Council. Mr. T. Phillips, clerk, Town Hall, Aberdare.

BARNOLDSWICK.—Aug. 10.—For erection of a retaining wall at the coal yard, Midland Station, Barnoldswick, for coal shoots, for the Barnoldswick Urban District Council

(Gas and Water Department. Mr. J. M. Edmondson, chairman, Town Hall, Barnoldswick.

BARNSELY.—Aug. 8.—For the several trades (except plumbers) required in building new waterworks offices, &c., in Doncaster Road, Barnsley. Mr. J. H. Taylor, M.I.C.E., borough surveyor and waterworks manager, Manor House Offices, Barnsley.

BELFAST.—Aug. 6.—For alterations to a dwelling-house situated in grounds of Abbey auxiliary workhouse, Whiteabbey, for the Guardians. Mr. R. H. Wilson, clerk, Workhouse.

BELFAST.—Aug. 23.—For building new National schools at Lower Sydenham, Belfast, for the Strand Presbyterian Church. Messrs. Fennell & Clarke, architects, 2 Wellington Place, Belfast.

BRADFORD.—For works required in erection of spinning mill, engine house, and boiler house. Mr. A. T. Verity, architect, Birkenshaw, Bradford.

BRENCHLEY (PADDOCK WOOD, KENT).—Aug. 5.—For the execution of certain painting and repairs required to be carried out at the Brenchley-Paddock Wood Council school, for the Kent Education Committee. Mr. W. H. Robinson, architect, Caxton House, Westminster.

BROADCLYST STATION (DEVON).—Aug. 9.—For erection of a dwelling-house on Sherwood Dairy Farm, Broadclyst Station, for Mrs. Lucy Mills. Messrs. Whitton & Laing, land and estate agents, 24 Gandy Street, Exeter.

CANEWDON (ESSEX).—Aug. 7.—The Trustees of the Canewdon Charities invite tenders, together or separately, for (1) alterations to Canewdon endowed school, and (2) provision and fixing of heating apparatus there. The work to be done during the summer holidays. Mr. J. Fawcett Wood, clerk, Clarence Street, Southend-on-Sea.

CHAPEL-EN-LE-FRITH.—Aug. 21.—For construction of concrete service reservoir. Conditions, specification, bill of quantities and tender from the engineers, Messrs. Brady & Partington, Town Hall, Chapel-en-le-Frith, after August 7. Deposit £2 2s. Mr. J. B. Boycott, clerk to the Rural District Council.

CHELMSFORD.—Aug. 28.—For extension of fire engine station in Market Road. Mr. W. Smith, town clerk, 16 London Road, Chelmsford.

CHESHAM.—Aug. 7.—For the construction of an open-air swimming bath on the Moor, for the Chesham Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Council Office, Chesham.

COLDRIDGE (DEVON).—Aug. 7.—For erection of farm buildings at South Moor, in the parish of Coldridge. Mr. W. Barrons, Burnham, Somerset.

CONGLETON.—Aug. 31.—For alterations at St. Peter's, St. James's, and St. Stephen's schools, for the Congleton Church of England Schools Joint Committee. Deposit £1 1s. Mr. J. Moir, Brereton Hall, Sandbach.

CONSETT.—For erection of new electric theatre in Front Street, Consett, for Messrs. the Consett Electric Theatres, Ltd. Mr. J. W. Wardle, architect, 20 Fowler Street, South Shields.

CORK.—Aug. 3.—For erection and completion of a residence at the Cork Sanatorium, Heatherside, Doneraile. Mr. R. Evans, C.E., 53 South Mall, Cork.

DUNGANNON.—Aug. 6.—For erection of 24 houses at Dungannon, for the Urban District Council. Deposit 10s. 6d. Mr. C. Newell, C.E., Dungannon.

ELGIN.—Aug. 8.—For the mason, carpenter, slater, plumber, plaster, painter, and iron works of meal mill to be erected at Elgin. Plans and specifications of Mr. C. C. Doig, architect, Elgin.

FLETON (HUNTS.).—Aug. 10.—For the enlargement of the County secondary school at Fletton by the addition of a new staff room, cloakroom, &c., for the Hunts. Education Committee. Mr. S. G. Cook, clerk to the committee, County Education Offices, Huntingdon.

GATESHEAD.—Aug. 6.—For erection of entrance lodge, Saltwell Cemetery. Deposit £1 1s. Mr. N. Percy Pattinson, borough engineer, Town Hall, Gateshead.

GOODWICK.—For alterations and additions to the Rose and Crown public-house. Deposit £1 1s. Mr. Hugh Thomas, 9 Victoria Place, Haverfordwest.

GRANGEMOUTH.—Aug. 5.—For construction of offices for Canal and Dock Superintendent. Deposit £2 2s. The Engineer, Buchanan Street Station, Glasgow.

HALIFAX.—Aug. 10.—For erection of a villa at Boothtown, Halifax. Messrs. C. F. L. Horsfall & Son, architects and surveyors, Lord Street Chambers, Halifax.

HIGHBRIDGE (SOMERSET).—Aug. 6.—For erection of a new infants' Council school at Highbridge, for the Somerset County Council. Messrs. Samson & Colthurst, architects, 51 High Street, Bridgwater.

INVERKEITHING.—Aug. 12.—For the mason and brick, joiner, plaster, tile, plumber, slater, painting, heating, and smith works of proposed school at North Queensferry, for the Inverkeithing School Board. A deposit of £2 2s. each required for the mason and joiner schedules and £1 1s. for each of the others. Messrs. Andrew Scobie & Son, architects, Dunfermline.

KINGHAM.—Aug. 6.—For erection of an engine shed at Kingham, Oxon, for the Great Western Railway Co. Mr. A. E. Bolter, secretary, Paddington Station, London.

KINGSTOWN (IRELAND).—Aug. 10.—For the following works, for the Kingstown Urban District Council; plans, specifications, and general conditions of contract can be inspected at the office of the Town Clerk, Town Hall, Kingstown: (1) Erection of baths and wash-houses at site at Kelly's Avenue, Kingstown; (2) erection of caretaker's house on site off Lower George's Street; (3) construction of new road from Lower George's Street to Northcote Avenue. Deposit £2 2s. Mr. J. S. Vaughan, town clerk, Town Hall, Kingstown.

LAMBOURN (HUNGERFORD).—Aug. 6.—For erection of workmen's dwellings in the parish of Lambourn, for the Hungerford Rural District Council. Mr. W. S. Raine, A.M.I.C.E., Hungerford.

LANGHO (NEAR BLACKBURN).—Aug. 13.—For the erection of new workroom at the Inebriate Reformatory. Deposit £2. Mr. Henry Littler, 16 Ribblesdale Place, Preston.

LINTHWAITE.—Aug. 7.—For erection of four dwelling-houses in Cowlersley Lane, Linthwaite. Mr. Arthur Shaw, architect, Golcar.

LIVERPOOL.—Aug. 6.—For alterations and additions to a warehouse in Chaloner Street, Liverpool, for the Great Western Railway Company. Mr. A. E. Bolter, secretary, Paddington Station, London.

LLECHRYD.—For alterations and erecting new cloakroom at Llechryd Council School, for the Cardigan County Education Committee. Mr. G. Dickens-Lewis, county architect, Aberystwyth.

LOCK'S HEATH (HANTS).—Aug. 19.—For erection of an additional classroom for fifty children at Lock's Heath Council School, for the Hants County Council. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

LONDON.—Aug. 13.—For foundations of new offices for the Public Trustee and Lunacy Commissioners, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. H. A. Collins, at H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Aug. 22.—For alteration and extension of boiler house at the workhouse, Swaffield Road, Wandsworth, for the Guardians. Deposit £2. Mr. F. W. Piper, clerk, Guardians' Offices, St. John's Hill, Wandsworth.

MERTHYR TYDFIL.—Aug. 12.—For erection of forty-eight workmen's dwellings on the Court Estate, near the Caemary-dwyn farm, for the Corporation. Deposit £2 2s. Mr. T. A. Rees, town clerk, Town Hall, Merthyr Tydfil.

OXFORD.—Aug. 6.—For erection of stables at Oxford, for the Great Western Railway Co. Mr. A. E. Bolter, secretary, Paddington Station, London.

PONTYPRIDD.—Sept. 2.—For erection of proposed new offices in Courthouse Street, Pontypridd, for the Guardians. Deposit £3 3s. Messrs. A. O. Evans, Williams & Evans, architects, Court Chambers, Pontypridd.

PORTRANE (CO. DUBLIN).—Aug. 8.—For erection of a new coastguard station at Portrane, Co. Dublin. Deposit £1. Mr. H. Williams, secretary.

RADCLIFFE.—Aug. 14.—For alterations and additions to Radcliffe technical school, for the Radcliffe Education Authority. Deposit £2. Mr. H. Littler, architect, 16 Ribblesdale Place, Preston.

ST. KEVERNE (CORNWALL).—Aug. 7.—For erection and completion of farm buildings at St. Keverne. Messrs. Granville & Hamilton, 53 Lemon Street, Truro.

ST. MARY BOURNE (HANTS).—Aug. 9.—For alterations to windows, ventilation, and lavatory accommodation at the St. Mary Bourne Council school, for Hants County Council. Deposit £1 1s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

SHEFFIELD.—Aug. 5.—For extension of the male sanatorium at the union hospital, Firvale, for the Guardians. Mr. G. D. Baxter, clerk of works, Firvale Workhouse.

SHEFFIELD.—Aug. 9.—For erection of fifty-five cottages on the Corporation estate at High Wincobank. The City Architect, Town Hall, Sheffield.

SILSDEN.—Aug. 9.—For the builder, joiner, slater, plumber, plasterer, painter, ironfounder, and smith and asphalter work at Silsden new school, for the West Riding Education Committee. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Skipton. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

SMALL HEATH.—Aug. 6.—For erection of offices, &c., at Small Heath, near Birmingham, for the Great Western Railway Co. Mr. A. E. Bolter, secretary, Paddington Station, London.

SOUTHEND-ON-SEA.—Aug. 17.—For erection of a lodge and refreshment room at Southchurch Hall Park, Southend-on-Sea, for the Corporation. Deposit £1 1s. Mr. E. J. Elford, M.I.C.E., borough engineer and surveyor. Mr. H. J. Worwood, town clerk, Southend-on-Sea.

STAMFORD.—Aug. 8.—For erection of public swimming bath in the George Paddock, Stamford, for the Corporation. Deposit £1 1s. Mr. F. R. Rymen, A.M.I.C.E., Town Hall, Stamford. Sealed tenders to be sent to the Town Clerk.

TAVISTOCK.—Aug. 8.—For erection of a bungalow residence in Glanville Road, Tavistock. Mr. B. P. Shires, F.R.I.B.A., architect, 21 Lockyer Street, Plymouth.

THOMASTOWN (NEAR TONYREFAIL).—Aug. 12.—For erection and completion of 29 dwelling-houses at Thomastown, near Tonyrefail, for the Welsh Navigation Building Club. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

TONLEY (ABERDEEN).—Aug. 8.—For the mason, carpenter, and slater work of a new barn wing of steading, West Haybogs, Tonley. Messrs. Hunter & Gordon, advocates, 80 Union Street, Aberdeen.

TREDEGAR.—Aug. 8.—For erection of a new chapel, adjoining Llys-Wedog Bridge, at Tredegar, Mon., for the trustees of the Poplar Road Congregational Church. Mr. A. F. Webb, M.S.A., architect and surveyor, Tredegar Chambers, Blackwood. Deposit £2 2s.

WEYBRIDGE.—Aug. 14.—The Commissioners of H.M. Works and Public Buildings are requiring tenders for the erection of Weybridge new head post office. Deposit £1 1s. H.M. Office of Works, Storey's Gate, S.W.

WOMBWELL.—Aug. 10.—For the construction of public baths at an estimated cost of £10,000. (Mr. Harold Burgess, architect, Queen Anne's Chambers, Broadway, Westminster, S.W.) Send application and £2 2s. deposit by August 10 to Mr. P. Milnes Walker, clerk to the Council, Town Hall, Wombwell.

THIRTEEN tenders were received for the reconstruction of the bridge over the River Hull, on the road from Beverley to Leven. This bridge, which is a brick one-arch structure, with a high gradient, has long been condemned as dangerous to the travelling public. The engineers responsible for its reconstruction were Sir John Wolfe Barry & Partners. The committee have accepted the tender of Messrs. Braithwaite & Kirk, of West Bromwich, to complete the work in seven months for the sum of £9,140 16s. This was confirmed by the Council. The Road Board will increase their contribution to the proposed bridge from £3,000 to £4,000.

AN attempt is being made to form the Insurance Society of the assistants and clerks of architects, surveyors, auctioneers, and land and estate agents, with a temporary office at 38 Parliament Street, Westminster, S.W., by a preliminary committee, with President and Treasurer. Principals are asked kindly to help in the formation of the Society. It is most probable that by October 15, when some Society must be joined, that this will be one of the most important and best in the country. There can be no doubt that the most sensible and advantageous way for the assistants and clerks of professional men to accept the position of insured persons under the Insurance Act is to form a Society to consist of themselves alone—to form a Society for each profession. There is so much difference between the assistant and clerk and his aims and objects in relation to his principal, and the so-called "working-man" who works by the hour and goes from place to place as a matter of course, that the possible variations in the methods and benefits of insurance available should be taken advantage of, and the most suitable result obtained. It is necessary that assistants and clerks should take every opportunity of making the Society known, and send in at once a letter, giving name and address of themselves and the employer, in order that a proper form of membership may be forwarded to them, so that the necessary number of members may be enrolled to constitute an "approved Society."

TENDERS.

BECCLES.

For the erection of new shops, &c., Smallgate Street, Beccles, for the Beccles Working-men's Co-operative Association, Ltd. Mr. ARTHUR PELLIS, F.S.I., architect, Beccles.

Parkington & Son	£3,650	0	0
Riches & Son	3,400	0	0
Carter & Wright	3,237	0	0
Scarles Bros.	3,265	0	0
Read	3,220	0	0
Grimwood & Son	3,192	0	0
Youngs & Son	3,148	0	0
Plummer & Son	3,140	0	0
Grimwood & Son, Ltd.	3,132	0	0
Sparkes & Latten	3,100	0	0
Hindes & Co.	3,100	0	0
King	2,995	0	0
Beckett & Son	2,973	9	9
Johnson	2,800	10	11
HINDES, Beccles (accepted)	2,784	0	0

FOLKESTONE.

For the erection of a house, lodge, stables, &c., on the Acrise Estate, near Folkestone. Mr. HENRY F. MENCE, architect, St. Albans.

Kirk & Randall	£5,643	0	0
Wallis & Sons	4,984	0	0
Gosby	4,830	5	0
Jenner	4,760	0	0
Redhouse & Son	4,755	0	0
Mark	4,660	0	0
Barton & Co.	4,649	0	0
Castle & Son	4,638	0	0
Scott Bros.	4,600	0	0
George Kemp & Co.	4,589	0	0
R. A. Lowe & Co.	4,587	0	0
Webster	4,587	0	0
Brightman & Sons	4,553	0	0
Vant	4,498	0	0
Moody	4,497	0	0
Barker & Sons	4,497	0	0
Hayward & Paramor	4,449	0	0
Blake	4,420	0	0
Miskin & Sons, Ltd.	4,253	0	0
WATTS & Co., Finchley (accepted)	4,020	0	0

HENDON.

For the erection of a public mortuary and other buildings, near the Council Offices. Mr. S. S. GRIMLEY, M.Inst.C.E., engineer and surveyor, Hendon.

Tout	£1,242	0	0
Gough & Co.	1,155	0	0
Moss & Son (mortuary only)	850	0	0
E. W. HALL, North Finchley (accepted for mortuary)	696	0	0
King (mortuary excepted)	294	10	0

Shed at Recreation Ground.

Tout (accepted)	£55	0	0
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Shedding and Bicycle Store.

KING, Hendon (accepted)	£232	10	0
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KENT.

The Kent Education Committee have accepted the following tenders for repairs and alterations to schools:—

Bexley Uplands Council School.

Johnson & Sons	£466	2	9
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North Preston Council School.

Johnson & Sons	£45	0	0
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Dartford St. Alban's Road School.

Bevan	£280	0	0
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Farnborough Green Street Green School.

Trigger Bros.	£61	0	0
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LONDON.

For Southern outfall sludge loading pumping engines, for the L.C.C.

Rees Roturbo Manufacturing Co.	£6,050	0	0
Drysdale & Co., Ltd. (alternative tender)	6,350	0	0
Drysdale & Co., Ltd. (alternative tender)	6,250	0	0
Fullerton, Hodgart & Barclay	6,000	0	0
Drysdale & Co., Ltd.	5,650	0	0
John Cochrane (alternative tender)	4,915	0	0
JOHN COCHRANE (recommended)	4,835	0	0

LONDON—continued.

For the alterations and additions at Kennington Lane Police Station. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor to the Metropolitan Police District, Scotland Yard, S.W.

Maddison	£7,842	0	0
Higgs & Hill	7,484	0	0
Eyre	7,475	0	0
Rice & Sons	7,435	0	0
Adamson & Sons	7,358	0	0
Fryer & Co.	7,322	0	0
Smith & Sons	7,220	0	0
Appleby & Son	7,125	0	0
Holloway Bros.	7,100	0	0
Minter	7,037	0	0
Pattinson & Sons	6,957	0	0
Prestige & Co.	6,862	0	0

For the enlargement of the school for mentally defective elder children, Victoria Road, Peckham, by twenty-four places.

Fletcher	£1,037	9	6
Triggs & Co.	1,032	0	0
Akers & Co.	1,023	0	0
Groves	995	0	0
Appleby & Sons	967	0	0
Holloway	949	0	0
J. & C. Bowyer	929	0	0
Hollingsworth	923	0	0
G. PARKER & SONS, Peckham (recommended)	870	0	0
Architect's estimate	964	0	0

For erection of workshop at Latchmere Road Secondary School, Battersea, for the L.C.C.

Maxwell Bros., Ltd.	£995	0	0
Marsland & Son	871	0	0
Appleby & Sons	822	0	0
Ford & Sons	808	0	6
Hollingsworth	789	0	0
Rice & Son	727	0	0
Triggs & Co.	698	0	0
Lole & Co.	684	11	6
BOWYER, LTD., Upper Norwood (recommended)	682	0	0
Architect's estimate	694	0	0

For the erection of Streatham and Balham relief sewer, for the L.C.C.

Mowlem & Co., Ltd.	£54,156	0	0
Underwood & Bro.	43,245	5	0
Coles	41,442	1	0
Muirhead & Co., Ltd.	41,083	12	11
Dickson	37,459	0	0
Airds, Ltd.	37,391	17	1
Jackson	35,306	10	9
BENTLEY & SON (recommended)	34,319	2	0
Chief engineer's estimate	35,300	0	0

For the erection of 158 additional cottages and administrative buildings on the second part of the western section of the Old Oak Estate, Hammersmith, for the L.C.C.

F. & T. Thorne	£46,874	0	0
Roberts & Co., Ltd.	41,863	0	0
Nicholls & Son	41,434	0	0
Wallis & Sons, Ltd.	41,212	0	0
F. & H. F. Higgs	41,055	0	0
Coxhead	40,655	0	0
Monk	39,976	0	0
ROWLEY BROS. (recommended)	38,697	0	0
Architect's estimate	38,600	0	0

For extension of the Clerkenwell fire station, for the L.C.C.

Marsland & Sons	£8,037	0	0
Holloway Bros. (London), Ltd.	7,980	0	0
Leslie & Co., Ltd.	7,749	0	0
Godson & Sons	7,742	0	0
Johnson & Co., Ltd.	7,590	0	0
Lawrence & Son	7,570	0	0
Holloway	7,400	0	0
Bowyer, Ltd.	7,297	0	0
Patman & Fotheringham, Ltd.	7,293	0	0
KERFIDGE & SHAW (recommended)	7,117	0	0
Architect's estimate	7,183	0	0

For extending the girls' staircase to the second floor at Ilderton Road school, Canberwell, for the L.C.C.

Bailey	£781	0	0
Bragg & Sons, Ltd.	580	0	0
Maxwell Bros., Ltd.	564	0	0
PARKER & SONS (recommended)	525	0	0
Architect's estimate	583	0	0

ROYAL SANITARY INSTITUTE.

THE twenty-seventh Congress of the Royal Sanitary Institute is being held at York from July 29 to August 3. A lengthy and instructive series of papers are to be read on subjects relating to domestic hygiene, engineering and architecture, and conferences of municipal representatives, engineers, surveyors, medical officers of health and sanitary inspectors will be held. Visits have been arranged to Earswick model village, Naburn locks, Doncaster model colliery villages, Gateforth Hall sanatorium, and to numerous public works; and as the number of delegates attending is one of the largest in the history of the Institute a very successful Congress may safely be predicted.

The delegates and members were received by the Lord Mayor of York on Monday last, followed by a luncheon in the ancient Guildhall, where he extended a cordial welcome to them. The Archbishop of York gave the inaugural address in the evening to a very large meeting, and reviewed the progress of the science of sanitation and hygiene, proving by statistics the improvements made during the past thirty years, as shown by the decreased death-rate and the improvement in the surroundings of the workers.

On Saturday, July 27, the Health Exhibition held in connection with the Congress was opened by H.R.H. Prince Arthur of Connaught, who showed by his speech and also by the interest he displayed in the various exhibits that he had more than a passing acquaintance with the objects for which the Exhibition had been organised.

The Exhibition, although not so representative as some of those held in previous years, contains much to interest the visitor in search of information in sanitary matters. The exhibits were carefully inspected and judged by a committee of civil engineers, architects and medical officers, under the chairmanship of W. C. Tyndale, Esq., M.I.C.E., and we give a list of the awards so far as they relate to subjects that are of interest to our readers.

On entering the Exhibition buildings the first stand to attract attention is that of "Ronuk," Ltd., who were given a bronze medal for their sanitary floor polish, which is now so generally used in schools, hospitals, and public buildings.

Sanitas Co., Ltd., were also awarded a bronze medal for their display of drain testers and disinfectants.

The Hygienic Construction and Portable Buildings, Ltd., were represented by a series of models to scale of Doecker buildings for sanatoria, which, apart from the excellence of the method of construction, are so designed as to give free circulation of air. With their lighter form of construction it is claimed that the building can be erected in eight hours, no special foundation being required. The Company received a silver medal.

The England Works have an interesting display of steel cloak-room, office and library fittings, for which they have previously received four medals from the Institute. The steel disinfecting chambers and wardrobes shown can be heated by steam or hot-water pipes. Sulphur drawers are fitted at the bottom, and ventilators to assist in starting the fumes and to dispel them through the chimney flue are provided. The automatic self-adjusting panic bolt is so designed that even small children, by the pressure of their bodies, unlock and open the doors. The "England" patent press knob for ordinary locks converts any latch into a press-latch. The "Sanatoria" fanlight opener is more particularly for use where blinds are fitted to windows having fanlights opening inwards. The quadrant is jointed, and falls perpendicular when the fanlight is shut. Below the gearing a projecting shoulder lifts the quadrant into position when the cord is pulled to open the fanlight and releases it by the reverse operation, when it falls into position with only 2 inches projection from the face of the sash. A bronze medal was awarded for these exhibits. Spencer Heath & George gained a silver medal for their display of educational and medical gymnastic apparatus.

Sanitaries, Ltd., the makers of Dr. Quine's sanitary dustbins, also show the bath basin, which title explains the object of the exhibit, for which they received a bronze medal.

William Harriman & Co., Ltd., show a variety of channel-bends, interceptors, gully traps, water waste-preventors, and closets. They received two bronze medals.

J. H. Walker & Co. made a good display of glazed stoneware sanitary pipes, bricks, terra cotta goods, chimney pots, &c., and had a bronze medal for their exhibit.

The British Sanitary Co. have a good variety of earth closets to show the different finishes to the cases, the mechanism being the same in their cheapest form, as well as in the more expensive. By their spreader, which throws the earth over the whole surface of the pan, these earth

closets are the most sanitary made. The British Sanitary Co. have already received eight silver medals from the Institute, and have received the same award at the present Congress.

Messrs. Carter & Co., Ltd., of Poole, show sample panels, tiles for walls, floors, hearths, &c., of the excellence expected from this firm.

The "Don" Fanlight Opener Co. have models of the "Don" fanlight opener, in which the quadrant lies parallel with the window when the fanlight is closed, and gained a bronze medal.

The Beacon Light (Valveless) Gas Generator, Ltd., have a working installation of their plant for lighting and heating. As we have recently favourably described this plant, it is only necessary to state that the silver medal they have gained confirms our good opinion.

Tuke & Bell, Ltd., show, in action, their method of sewage treatment with their "Ideal" revolving distributor. This exhibit has been selected by the judges for further practical trial. An installation suitable for country houses, consisting of ferro-concrete liquefaction tank with distributing tipper and tray for aerobic filter bed, is also exhibited.

Wm. Boby received a silver medal for his system of water-softening, and the Webb Lamp Co., Ltd., a similar award for their sewer ventilating lamp.

Messrs. Thomas Parsons & Sons again receive the recognition from the Institute of the good qualities of their manufactures by being awarded a bronze medal, the highest award in their class.

"Endelline," "Endelflat," and "Lacreite" sanitary enamel paints are employed in the decoration of their attractive stand, a "Transol" frieze surmounting the whole. The transfer to the walls was effected after the stand was erected, showing its superiority over stenciling, both for effect and saving of time. "Opako," a material employed as an under-coat for enamel, &c., free from white lead, as well as varnishes and stains, are also exhibited.

The Improved Sanitary Appliances Co. have a very interesting exhibit of sanitary appliances. The patent adjustable cantilever water closet, in which the junction branch piece, trap and socket are in one piece, the soil having, therefore, to pass one joint only, can be set at any angle on plan to suit position of the outside soil pipe. The soil is conveyed in a straight line from the pan to soil pipe. It is entirely carried by the wall on the bearing plate, and thus stands clear of the floor, enabling it to be kept thoroughly clean. A bronze medal was awarded.

The Patent Cantilever Sink Traps comprise a bracket, trap, inspection arm, and head in one casting, forming a cantilever, and the building of it into the wall fixes all four at once. This appliance gained the Institute's medal at the Brighton Congress in 1910. The "Conqueror" combination, by which the washing copper becomes the bath water heater, is now well known, and was also awarded a bronze medal at the Brighton Congress. It holds fourteen gallons, and gives a supply of hot and cold water to the bath and to the sink, the hot water being forced to the upstairs bath or to the sink solely by the influx of cold water, and thereby ensures a continuous supply.

J. H. Shanksmith had a good display of bathroom fittings, lavatories, &c. The Walker health pipe was also shown, for which he was awarded a bronze medal.

Jones & Attwood, Ltd., gained a silver medal for their exhibit of working models of patent sewage wheel distributors and rotary distributors for circular filters, also a bronze medal for their "Bathheater" boiler and circulating cylinder combined, designed for fixing in kitchen or scullery.

The Model Abattoir Society were awarded a silver medal for their models of public abattoirs designed by Mr. R. S. Ayling, architect.

Cloughton Bros., Ltd., as usual, have a comprehensive display of sanitary lead work, and received a bronze medal for "Niagara" lead line syphon cistern, and also a bronze medal for their "Adaptable Suspension" wash-down closet.

Kirtley & Son, Ltd., gained a bronze medal for their earth closet hatch, and another for the "Mowbray" tipping ash bin.

The Cobra Drain and Pipe Cleanser, Ltd., received a bronze medal for their drain cleaning apparatus, which withdraws stoppages from sanitary pipes without opening them up.

Moule's Patent Earth Closet Co., Ltd., were again awarded a bronze medal for their earth closets, of which they showed various patterns.

Chaddock Ventilation Co., Ltd., gained a silver medal for their automatic window ventilators, which are constructed to enable the operator to regulate the direction of the air movement.

The Limmer Asphalte Paving Co., Ltd., showed specimens of raw mineral rock asphalt, also reduced to powder, "Lithofalt" asphalt paving blocks, vertical damp courses, and roofing, for which latter they received a bronze medal.

In the Gallery the City of York had an excellent display of electric fittings, cooking ranges, radiators, ventilating fans and ozone generators, &c., and working demonstrations were given of the use of the British Vacuum Cleaners electrically worked. The York United Gas Light Co. showed gas heated boilers, gas fires, gas cookers, radiators, &c., manufactured by Fletcher Russell & Co., Wilsons & Mathiesons, and John Wright & Co. There is also an excellent loan exhibition of models, charts and diagrams relating to matters of public health and sanitation.

THE BRITISH FIRE PREVENTION COMMITTEE'S SUMMER MEETING.

THE British Fire Prevention Committee's proceedings on the second day of their summer meeting (of July 24 and 25) were attended by practically the same members and visitors as those of the first day, the testing operations, however, being in the hands of Mr. Ellis Marsland (district surveyor) and Mr. Bertram Chatterton, A.M.Inst.C.E. (insurance surveyor), and among those who had not been present on the previous day were Lieutenant Sladen, R.N., and Mr. Gamble, F.S.I., of the London Fire Brigade. The Earl of Londesborough, K.C.V.O., supported by other members of the Council, again received the visitors, and among the authorities represented were the Home Office, Admiralty, Board of Trade, London County Council, &c.

The fire tests were with three sets of electro-glazing case-ments of the Luxfer type, followed by a test with a double door constructed of reinforced concrete, this latter hailing from Belgium, where it had been constructed to the specifications of the Chairman of the Belgian Government Fire Committee, and had been sent over for report.

The arrangement of holding tests on two consecutive days was considered a great success, inasmuch as it made it more convenient for members and representatives of authorities in the provinces specially visiting London, and it is to be anticipated that this arrangement will be followed in future years.

Results of Tests.—Some of the official "short results" of the testing operations at the British Fire Prevention Committee's testing station on July 24 and 25 have now been authorised for issue. They may be summarised as follows:—

The 22 feet by 15 feet reinforced concrete floor with "triangle mesh" reinforcement, and submitted by the United States Steel Products Co., of London, obtained classification as affording "full protection" (Class B) on a four hours' fire test at temperatures ranging up to and above 1,800° F., followed by the application of water from a steam fire engine (through two branches) for five minutes, the floor being under a load of 2½ cwt. per foot super during the test. This is the first floor having this method of reinforcement subjected to official fire test in England and to attain this high classification.

The double reinforced concrete doors submitted for test by the Chairman of the Belgian Government Fire Committee obtained the classification of affording "full protection" (Class A) on a 2½ hours' fire test at temperatures ranging up to and above 1,800° F., followed by the application of water from a steam fire engine (through one branch) for five minutes.

The "Chadrac" electro-glazing to windows, submitted for fire test by Messrs. Joseph Chater & Sons, in panels of 2 feet by 2 feet, and similarly in a panel of 4 feet by 2 feet, obtained the classification of affording "temporary protection" (Class B) on a one hour fire test at temperatures up to and above 1,500° F., followed by the application of water from a steam fire engine (through one branch) for two minutes. This is the first occasion of so large a panel of electro-glazing of 8 feet super having attained this classification.

The results obtained in the remaining fire tests with "Chadrac" electro-glazing and "Luxfer" electro-glazing will be announced later.

Further Tests.—The committee announce that the reinforced concrete floor referred to above will be submitted to an additional load test over and above the committee's standard requirements by the application of a heavier load after the subsequent cooling of the floor, and that among the next tests will be a series with a non-flaming celluloid known as "Cellit," the first product of this character to be submitted to the committee's official tests.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BUCKINGHAMSHIRE.

Amersham.—Isolation Hospital.

Wymondley.—Public abattoir.

CHESHIRE.

Congleton.—St. James', St. Peter's, and St. Stephen's C.E. Schools: alterations.

Macclesfield.—Country Nursing Home for the Cripple Children's Help Society.

CUMBERLAND.

Carlisle.—Council School, Caretaker's Cottage, &c., off Newtown Road.

DERBYSHIRE.

Bugsworth and Chinley (between).—Council School for 250 scholars.

Dronfield.—Picture Palace. Mr. J. S. Elshaw, architect.

Ripley.—Seven houses, Heath Road, for Mr. A. Gent.

Two houses, Wellington Street, for Mr. E. Tansley.

DEVON.

Crownhill.—Farm buildings, Whiteleigh Hall: additions and alterations. Messrs. Carder & Carder (of Plymouth), architects.

Egg Buckland.—Council School: alterations.

Tavistock.—Cookery Centre and Art rooms.

Whitestone.—Two dairy-houses, farm buildings, and additions and alterations, Way Farm. Messrs. Ellis, Son & Bowden, F.S.I. (of Exeter), architects.

DORSET.

Portland.—Council (Underhill) School.

DURHAM.

Bishop Auckland.—Wesleyan Church, South Road (£12,000).

Gateshead.—Lunatic Asylum. Messrs. G. T. Hine & H. C. Pegg, F.F.R.I.B.A. (of London), architects.

Sunderland.—Infectious Diseases Hospital: extensions (£6,000).

Workhouse, Hylton Road: additions and alterations. Messrs. W. & T. R. Milburn, F.F.R.I.B.A., architects.

ESSEX.

Billerica.—Workmen's dwellings, Great Burstead (£11,100).

Canewdon.—Endowed School: alterations. Mr. F. Whitmore, County architect, Chelmsford.

Chelmsford.—Fire Engine Station, Market Road: extension. Borough Engineer.

Central Sanatorium for consumption.

Grays.—School, Arthur Street: additions and alterations. Messrs. H. J. Carter, Ltd., contractors (£2,175).

Ingrave and East Horndon.—Council School.

Leigh.—Council School (£8,800).

Southend-on-Sea.—Girls' County High School (£16,000).

Thundersley.—Non-provided School.

GLOUCESTERSHIRE.

Nympsfield.—Public elementary school.

KENT.

Beckenham.—Three houses, Manor Way, for Mr. J. Overall. House, Wickham Way, for Mr. G. Taylor.

Dover.—Boys' County school.

Heath.—"Prince of Wales" P.H.: rebuilding.

Iwade.—Council School (£1,180).

Maidstone.—Council School, Tonbridge Road: extension. Borough Surveyor.

Sevenoaks Weald.—Council School: improvements. Mr. W. H. Robinson, F.S.I. (of London), architect.

LANCASHIRE.

Blackpool.—Picture Hall, South Shore.

Hale.—Congregational Church, Ashley Road (500 sittings).

Messrs. Frame & Laycock (of Manchester), architects.

Messrs. Martin Stone & Sons (of Altrincham), contractors.

Liverpool.—Exchange Station Hotel: alterations.

Midland Adelphi Hotel: completion.

Prescot.—Grammar School (£10,000).

Radcliffe.—Technical School: additions and alterations.

Mr. H. Littler (of Preston), County architect.

Rochdale.—Church of St. Ann's, Belfield (352 sittings). (£3,150.)

LEICESTERSHIRE.

Leicester.—Council School, Hinckley Road. Mr. W. M. Cowdell, F.R.I.B.A., architect.

LINCOLNSHIRE.

Donington.—Parochial Hall and Reading-room.
Holbeach Bank.—County Police Cottage: alterations, &c.
 Mr. E. J. A. Christie (of Boston), County architect.

MONMOUTHSHIRE.

Abertillery.—Two shops, Somerset Street. Mr. N. G. Lewis, F.R.I.A.S., architect.
Rhymney.—Thirty houses (£6,800). Mr. W. B. Rees, A.R.I.B.A. (of Cardiff), architect.

NORTHAMPTONSHIRE.

Peterborough.—Theatre Royal: alterations.

OXFORDSHIRE.

Dunsden and Eye.—Council School (£2,300).
Henley.—Royal Grammar School: new buildings.
Horton-cum-Studley.—Council School.

SHROPSHIRE.

Bishop's Castle.—Mixed Secondary school for 100 places (£5,000).
Oswestry.—Welsh Church of St. David.

STAFFORDSHIRE.

Brierley Hill.—Special Subjects Centre, Quarry Bank.
Brownhills.—Walsall Wood C. of E. School: alterations and improvements.
Leek and Norton Canes.—Council School.
Tamworth.—Workhouse: Kitchen and Stores (£1,450).

SUSSEX.

Brighton.—Brighton, Hove and Sussex Grammar School: Boarding house and Headmaster's house (£8,000).
Worthing, West.—Assembly Chapel for 250 places, Ripley and Rugby Roads.

SURREY.

Guildford.—Hippodrome for 1,500 seats. Mr. C. Masey (of London), architect.
 Prudential Assurance Company's offices, High Street.

WARWICKSHIRE.

Birmingham.—Alterations to offices of the Water Department, for a tuberculosis centre and City Analyst's laboratory.
Nuneaton.—Atherstone Council School: additional accommodation.

WILTSHIRE.

Stoford.—U.M. Chapel. Mr. J. Cleland (of Salisbury), architect. Messrs. Wort & Way (of Salisbury), contractors.
Trowbridge.—High School: additions and alterations, &c. Mr. J. G. Powell, County surveyor.

YORKSHIRE.

Askern.—Council School additions. West Riding Education architect, Wakefield.
Doncaster.—Liberal Club, St. James Street (£2,500).
Ferrybridge.—Two houses. Mr. W. J. Tennant (of Pontefract), architect.
Howden.—Isolation Hospital, Holme Road.
Huddersfield (near).—Branch store, Salendine Nook, for the Huddersfield Industrial Society, Ltd. Messrs. J. Berry & Sons, architects.
Kimberworth.—St. Paul's Mission Church: extension (£2,400).
Knottingley.—Belmont House: additions; also School House: additions; also Parish Hall: additions. Mr. W. J. Tennant (of Pontefract), architect.
Leeds.—Infirmary extension.
 Malvern Picture Palace, Beeston Hill. Mr. W. H. Beevers, A.R.I.B.A., architect.
 Parochial Hall, Roundhay.
 Council School, Lidgett Park Road, Roundhay.
Malton and Norton.—Opera House.
Sheffield.—Workhouse Hospital: extensions (£20,000).
 Union Hospital, Firvale: Male Sanatorium extension.
 Sale Memorial Parochial Hall (£1,300). Mr. W. A. Forsdike, architect.
Thirsk.—Constitutional Club and Town Hall. Mr. W. H. Brierley, F.R.I.B.A., F.S.A. (of York), architect. Mr. W. Birch (of York), contractor.
 Secondary School.
Wombwell.—Public Baths (£6,000). Mr. H. Burgess (of London), architect.
York.—Lock-up shops, &c., Queen Street, for the Corporation.

WALES.

Aberporth.—Council School.
Anglesey.—Isolation Hospital.
Flint.—Council School additions.
Garnant.—Council School. Messrs. D. Howell & Son (of Llandeibie), contractors (£6,480).

Gronant.—Full Standard school.

Grovesend.—Council School.

Holywell.—Council Mixed School for 350 places (£5,000).

Mynydd Isa.—Full Standard school.

Neath.—Graded Infirmary, Penrhiewtyn. Mr. J. C. Rees, architect. Messrs. E. Thomas & Sons (of Seven Sisters), contractors (£21,600). Mr. W. Evans (of Skewen), electric lighting contractor (£906).

SCOTLAND.

Arbroath.—Messrs. James Keith & Blackman Co., Ltd.'s, premises: extensions.

Messrs. Scott & Graham's, Ltd.: alterations and extensions to offices, &c., at the Cattle Mart.

Messrs. F. Webster & Sons' Factory: extension.

Canonbie.—Public Hall for 400 sittings (£1,100).

Dumbarton.—Public Baths, Bankend Road.

Edinburgh.—Ladies' College: re-construction. Mr. H. J. Blanc, R.S.A., F.R.I.B.A., &c., architect (£50,000).

Royal Scottish Museum: extension (£126,390). Mr. W. T. Oldrieve, F.R.I.B.A., F.S.A., H.M.

Office of Works, architect.

Glasgow.—Library, Langside (£15,500).

Mitchell Library, Miller Street: alterations (£1,400).

Nos. 151-155 Bath Street, Govan: extension for the

School Board.

Linlithgow.—Factory, St. Magdalene's, for Messrs. A. Newlands & Sons.

Factory extension for the Nobel's Explosive Co., Ltd.

IRELAND.

Armagh.—Church House and Primate Alexander Synod Hall. Messrs. W. Sampson (M.R.I.A.I.) & R. C. Orpen, F.R.I.A.I. (of Dublin), architects. Messrs. McGloughlin & Harvey, Ltd. (of Belfast), contractors.

Belfast.—Electricity Power Station for the Corporation (£90,000).

Doneraile.—Cork Sanatorium, Heatherside: Medical Superintendent's residence. Mr. R. Evans, C.E. (of Cork), architect.

Dungannon.—Twenty-four workmen's houses. Mr. C. Newell, C.E., architect.

Killiney.—Five working-class dwellings, Talbot Road. Messrs. Millar (F.R.I.B.A.) & Symes (of Dublin), architects.

Kingstown.—Baths and Washhouses, Kelly's Avenue. Caretaker's house, off Lower George Street.

Pembroke.—Electricity Works: extension of buildings, South Lotts Road.

Shangarry (Co. Carlow).—Medical Officer's residence and Dispensary, for the Board of Guardians. Engineer to the Guardians, Carlow.

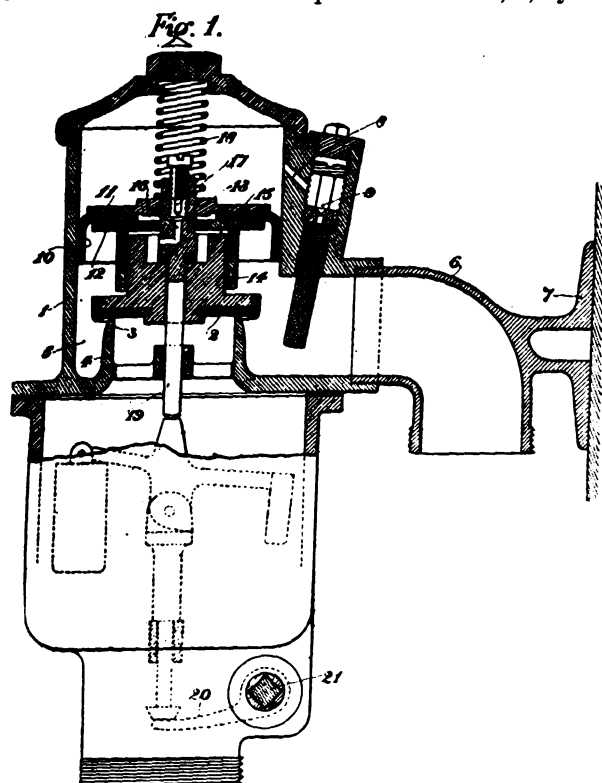
BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Root, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 13,693. June 8, 1911.—Improvements in flushing valves. T. W. Twyford, Cliffe Vale Potteries, and Enamelled Fireclay Works, Hanley, Staffs. This invention relates to flushing valves or appliances employed in connection with water closets, urinals, and the like, for the purpose of giving a direct flush without the use of a flushing cistern. The object is to provide a more efficient construction, and also a flat or bucket device which will ensure a definite period between successive flushes, and thus give an intermittent action. Fig. 1 represents a section through the flushing appliance. A cylindrical chamber, 1, contains the rising and falling main valve, 2, which normally rests upon a seating, 3, at the upper end of an outlet passage, 4, leading to the discharge or flush pipe, and forming, with the walls of the lower part of the top chamber, 1, an annular space, 5, which at one side opens into a branch pipe, 6, connected to the main supply, and carrying the attachment bracket, 7, of the appliance. The valve, 2, overhangs the seating, 3, so that when closed the pressure of the water acts on the underside of its outer edge and tends to lift it off its seating. Leading from the inlet branch, 6, into the upper part of the top chamber is a small passage, or by-pass, 8, through which the chamber is filled with water, the pressure of which normally keeps the main valve upon its seating. The by-pass has a regulating valve, 9, so as to vary the quantity of water

that passes, and thus the time the chamber takes to fill and the period of the flush. Within the pressure chamber, 1, is a plunger, 10, consisting of an inverted leather cup washer, and clamped between upper and lower plates, 11, 12, screwed on to a central stem, 13. The lower member, 12, is provided upon its underside with a cylindrical housing, 14, within which a piston extension or reduced portion, 15, of the main valve, 2, has a close sliding fit. This chamber, 14, communicates with the main pressure chamber, 1, by means



of a passage, 16, through the stem, 13, the passage being adjustable, as regards its effective size, by means of a screw valve, 17, so as to vary the rate at which the water can enter the valve chamber. The plunger is acted upon by a spring, 18, which tends to return the main valve on to its seating. The stem, 13, is prolonged into a depending rod, 19, passing through the main valve, and adapted to be operated by a lever arm, 20, mounted upon a horizontal spindle, 21, upon which an external lever handle is fixed. June 26, 1912.

PATENT SPECIFICATIONS PUBLISHED JULY 25, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 15,093. June 28, 1911.—J. S. Owens, 47 Victoria Street, Westminster, S.W. Metallic sheet piling.

15,202. June 29, 1911.—F. W. Robertshaw, 617 Braddock Avenue, Pittsburgh, U.S. Water heaters.

15,227. June 29, 1911.—L. Petersen-Hviid, Kastrup, near Copenhagen. A process for removing the volatile constituents contained in certain woods so as to render them capable of taking a high and durable polish.

15,581. July 4, 1911.—Carl Karges, 36 Bramscherstr., Osnabruck, Germany. Locking device for door latches.

15,831. July 7, 1911.—H. C. Lassam, The Hut, Walton-on-Thames, and T. M. Thom, Woodlands, Cheshunt, Herts. Glazing bars and the like.

16,225. July 13, 1911.—D. E. Brown and C. A. Vandervell, Warple Way, Acton Vale. Lamp reflectors.

19,684. Sept. 4, 1911.—Date claimed under International Convention Sept. 3, 1910. C. V. Biedinfeld & Co., G.m.b.H., 12 Maasenstr., Berlin. Indicating mechanism for height and length measuring device and the like.

20,038. Sept. 9, 1911.—A. R. Taylor, 23 Rosendale Road, Dulwich, S.E. Steam roller speed indicator.

21,034. Sept. 23, 1911.—Stephen Strettles, 12 Willows Crescent, Birmingham. Sand moulding machines.

22,678. Oct. 14, 1911.—William Taylor, 69 Shepstone Road, Horbury, near Wakefield. Hinged gates and doors.

24,229. Nov. 1, 1911.—Carl Hotz, 48 Doneraile Street, Fulham. Apparatus for preventing the deposit of moisture on windows and other glass surfaces and other analogous purposes.

24,468. Nov. 3, 1911.—E. & F. W. Edlin, 20 Cavendish Road, Leicester. Moulds for use in the manufacture of paving slabs and the like.

15,536. July 4, 1911.—William Smith, Fair View, Lower Gornal, near Dudley. Die for making perforated bricks.

25,264. Nov. 13, 1911.—Date claimed under International Convention Nov. 14, 1910. Otto Mengers, 32 Regensburgerstr.; Karl Lange, 46 Wilhelmstr.; and Georg Lentschat, 11 Hundekehlenstr., Schmargendorf, Berlin. Gas heating and lighting apparatus.

25,515. Nov. 16, 1911.—Thos. C. Fawcett, Ltd., and J. D. Fawcett, Whitehouse Engineering Works, Hunslet Road, Leeds. Brick making machines having rotary feeders.

25,945. Nov. 21, 1911.—J. W. Phillips, 127 Millbrook Road, Southampton. Casement windows, doors, and the like.

26,757. Nov. 29, 1911.—Date claimed under International Convention Nov. 30, 1910. S. J. Larsson, 10 St. Eriksgatan, Stockholm. Stone saws.

29,393. Dec. 30, 1911.—Date claimed under International Convention Jan. 5, 1911. August Butner, Verdingen-on-the-Rhine. Joints of heat radiators and the like.

899. Jan. 11, 1912.—J. A. Schlehr, 36 W. Randolph Street, and Louisa Consoe, 1511 Park Street, Chicago, U.S. Bolt holders, pipe wrenches, and the like.

1,553. Jan. 19, 1912.—Simon Biheller, 70 Chiswell Street, London. Globe rings or holders for supporting globes for gas and other lamps.

2,147. Jan. 26, 1912.—Simon Biheller, 70 Chiswell Street, London. Fittings for supporting a lamp shade and globe.

2,762. Feb. 2, 1912.—W. J. Swain, architect, Bell Vue House, 118 Hasby Road, York. Reinforced floors and beams of concrete or any other fireproof or fire-resisting material.

3,518. Feb. 12, 1912.—Albert Lochert, 2 Pannierstr., Neukolln, Germany, and the Florozon-Gesell. mit Beschränkter Haftung, 101 Lindenstr., Berlin, S.W., 68. Door and like springs.

3,629. Feb. 13, 1912.—M. H. Tulloch, C.B., R.E., 33 Half Moon Lane, Herne Hill. Means for controlling the flow of liquids through pipes, sewers, and other channels.

5,983. March 9, 1912.—Deutsche Filtercompagnie G.m.b.H., and Valerius Kobelt, 3 Haberlandstr., Berlin, W., 30. Filters.

6,034. March 11, 1912.—Date claimed under International Convention March 10, 1911. Firm Kaliwerke Aschersleben Abteilung Tekton, of Aschersleben, Germany. Flooring.

6,561. March 16, 1912.—William Bell, Fortfield, Dunmurry, Belfast. Hinges and means for retaining them in more than one position.

10,602. May 4, 1912.—Date claimed under International Convention May 18, 1911. Firm of Gebr. Friesecke, Artificial Stone Works, 94 Plan-Ufer, Berlin, 8. Improved shaking machine for use in the manufacture of concrete or artificial stone.

11,239. May 11, 1912.—Date claimed under International Convention May 18, 1911. Edward Friedrich, 25b Carl Heinestr., Leipzig-Plagwitz, Germany. Breaking or crushing apparatus.

13,596. June 10, 1912.—Date claimed under International Convention June 23, 1911. Gustaf Dalen, 18 Stadsgården, Stockholm. Storing of acetylene gas.

INCORPORATED CHURCH BUILDING SOCIETY.

THIS Society held its usual monthly meeting on Thursday, July 18, at the Society's house, 7 Dean's Yard, Westminster Abbey, S.W.

Grants of money were made in aid of the following objects—namely: Building first portions of new churches at Aldersbrook, St. Gabriel, Essex, £50; Chalfont St. Peter, All Saints', Bucks, £90; Sandycroft, St. Ambrose, Hawarden, Flint, £75; and Siddal, St. Mark, Halifax, £75; and towards enlarging or otherwise improving the accommodation in the churches at Bedminster, St. Aldhelm, Bristol, £35; Dearnley, St. Andrew, near Rochdale, £50; Groombridge, St. John, Kent, £25; Little Steeping, St. Andrew, Lincs., £40; South Norwood, St. Alban, Surrey, £70; Orlingbury, St. Mary-the-Virgin, Northants, £10; Swansea, Christ Church, Glam., £100; Withycombe, St. Nicholas, Somerset, £60; and Woolacombe, St. Sabinus, Devon, £80. Grants were also made from the Special Mission Buildings Fund towards building Mission churches at Stanley Common, All Saints', Derby, £40; Swansea, St. Martin, Glam., £30; and Westcliff-on-Sea, St. Michael and All Angels, Essex, £50. The following

grants were also paid for works completed:—Bishopwearmouth, St. Gabriel, Sunderland, £250; West Streatham, St. James, Surrey, £175; Woolacombe, St. Sabinus, Devon, £100; Branscombe, St. Winifred, Devon, £50; Speenhamland, St. Mary, Berks., £150; Gyfeillon, St. David, Glam., £30; Loughborough, St. Peter, Leicestershire, £125; Plymouth, St. Mary, £140; Kingston Hill, St. Paul, Surrey, £50; Southend-on-Sea, St. John the Baptist, £50; Hoole, All Saints', Cheshire, £60; Somersham, St. John the Baptist, Hunts., £5; Abercrave, St. David, Breconshire, £100; Frimley Green, St. Andrew, Surrey, £50; Rotherhithe, Clare College Mission, Kent, £35; and Bispham, St. Stephen, Lancs., £40. In addition to this, the sum of £810 was paid towards the repairs of fourteen churches from Trust Funds held by the Society. The committee once more ask for a prompt and generous response to its urgent appeal for contributions to its work of church extension and repair. The population of the country is increasing by more than 400,000 every year, and the need for church building is a proportionately increasing one. The Society has no endowments, and is absolutely dependent upon voluntary offerings. Among contributions recently received have been cheques for £1,000, £200, and £25 respectively.

LONDON MASTER BUILDERS' ASSOCIATION.

THE Council of the London Master Builders' Association met on July 18, the chair being occupied by Mr. James S. Holliday, president. The special committee appointed to confer with the representatives of the various trade organisations submitted its reports of the several conferences which had been held which were unanimously adopted. The recommendation of the Law and Parliamentary Committee in respect to important legal cases affecting members of the association was approved and adopted. The following firms were nominated for associate membership:—Messrs. C. Burley, Ltd., Sittingbourne; Messrs. Samuel South & Son, Edmonton.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

CANDIDATES who propose applying for admission to the November Final and Special examination should at once submit for the approval of the Board of Architectural Education the subject and titles of their theses. Candidates may select one of the following:—

1. *Historical Architecture*, implying, as far as possible, the direct study of actual historical buildings.
2. *Science, as applied to Building*. By this is intended a special study of an application of science to definite problems of building.
3. *Design, including Decoration*, such as a study in civic monumental, decorative, or other branch of architectural design.

The subject selected for the thesis is to be notified for the approval of the Board four months before the date of the examination, and the thesis itself is to be submitted four weeks before the same date. The thesis, which may be either an illustrated essay or a design with a detailed report, will be assessed by examiners specially appointed for the purpose, who will also examine the candidate orally in his thesis. It is open to candidates to obtain distinction in the advanced work, such special distinction to appear in the Kalendar.

VARIETIES.

IN the historic neighbourhood of Hambleden, Bucks, a Roman villa has been discovered, and the process of excavation is being carried out with success.

PLANS for the enlargement of St. Luke's Chapel-of-Ease, Stoke Bardolph, Notts, are being prepared by Mr. R. Whitbread, M.S.A.

THE Hemsworth Board of Guardians have accepted the plans of Mr. Richardson for a proposed workhouse, subject to the approval of the Local Government Board. It was decided to proceed at once with the erection of the aged men's block, the isolation block, and the mortuary.

IT is proposed to have a public architectural competition for a library to be erected in Langside ward, Glasgow. The estimated cost of the building is £5,500. It is recommended that a site at the corner of Sinclair Drive and Battlefield Road be utilised for the purpose.

IN connection with the Spalding housing scheme promoted by the Urban District Council, Mr. J. B. Corby, F.S.I., of Stamford and Spalding, has been selected from three local architects to prepare the plans. Instructions have been given to have the plans prepared forthwith for submission to the

Local Government Board, and as soon as the proper authority is obtained the work will be commenced.

THE recommendation of the Sanitary Committee that the Devonport Council adopt the Baths and Washhouses Act, that the terms of Lord St. Levan for a new lease of the bathing-place at Mount Wise be accepted, that the tender of Mr. E. R. Lester (£879) for the swimming bath be accepted, and that application be made to the Local Government Board for sanction to the borrowing of £1,200 has been adopted.

UNDER the will of the late Sir James Inglis, a former President of the Institution of Civil Engineers, the Institution has just received a legacy of £5,000, to be applied to its new building, which is now in course of erection in Great George Street, Westminster. This legacy testifies to the marked interest which Sir James Inglis took in the scheme for the rebuilding of the Institution, towards the cost of which he had also during his lifetime contributed liberally, regarding the occasion as an opportunity to promote the centralisation, and thereby the strength, of civil engineering interests throughout the British Empire.

THE succession of Mr. Walter Knight Shirley, Licentiate R.I.B.A., to the Ferrers Earldom, as eleventh earl, has, says the *Yorkshire Post*, not a parallel since, on the death of the late Duke of Hamilton without male issue, the dukedom passed to a very distant kinsman, a naval lieutenant, by virtue of his descent from the third son of the celebrated fourth Duke, who was slain in a duel with Lord Mohun at Hyde Park in 1712. Mr. Shirley has succeeded his distant kinsman through his descent from the first Earl Ferrers, who died in 1717. That nobleman, who was predeceased by his eldest son, was followed in the earldom by his second and third sons. Earl Ferrers' fourth son was the father of the fourth, fifth, and sixth earls, the fourth being the nobleman who was hanged at Tyburn for murder. Mr. Shirley is lineally descended from a younger branch of these three earls, the links in the chain being the Rev. Walter Shirley, the hymn writer; Walter Shirley, Bishop of Sodor and Man; and the late Canon Shirley, Regius Professor of Ecclesiastical History at Oxford, who died when his son, now the eleventh Earl Ferrers, was an infant.

FOR the many thousands of holiday makers who will take advantage of the August Bank Holiday for a desirable change, the Great Central Railway have just published a varied choice of excursion facilities to all parts of their system. A perusal of their special A.B.C. programme reveals the extensiveness of the arrangements offered to over 300 holiday resorts and towns in the Midlands, Yorkshire, Lancashire and the North of England. Special trains will leave Marylebone at convenient times on Friday, Saturday, Sunday and Monday, August 2, 3, 4, 5, and these express trains are equipped with restaurant cars, enabling passengers to obtain refreshments at the most moderate tariff. For those who wish to spend a pleasant day or week-end nearer home suitable excursions are arranged to many picturesque and historical places in Middlesex, Herts, and Beechy Bucks. This tract of delightful country, with its old-world villages, breezy heights, and peaceful vales, is admirably suited for walking and cycling, and special cheap fares are in operation for both the walker and the cyclist. Copies of this special holiday programme may be obtained free at Marylebone Station, G.C.R. Agencies, or by post from Publicity Department, 216 Marylebone Road, N.W.

TRADE NOTES.

MESSRS. W. F. STANLEY & Co., LTD., the well-known instrument makers, have opened a branch at 68 Queen Street, Glasgow, and are prepared to supply the needs of Scots draughtsmen.

MESSRS. J. H. SANKEY & SON, LTD., Essex Wharf, Caning Town, E., have put on the market a new heavy patent brass sink or bath waste, with a special removable strainer bucket. It is claimed for it that it is strong, sanitary and cheap. The firm are famous for their stock of sanitary pipes and fittings, and it may be safely said that their new improvement is a "good thing."

ST. OSWALD'S CHURCH, Lower Peover, Cheshire, possesses a ring of six bells, tenor 9 cwt., and it has now been decided to have them recast and rehung in a steel frame as a memorial to the late Rev. Arthur Guest, who was vicar from 1877 to 1911. The bells are to be recast into a new ring of six, with a 12-cwt. tenor, and the work is to be carried out by Messrs. John Warner & Sons, of the Spitalfields Foundry, London.

THE Architect and Contract Reporter.

FRIDAY, AUGUST 9, 1912.

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* * Entered in the United States of America as second-class matter.

AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BECKENHAM.—Aug. 12.—The Education Committee invite designs in competition for proposed public elementary school. Send application by August 12 to the assessor, Mr. A. W. S. Cross, F.R.I.B.A., 46 New Bond Street, London, W.

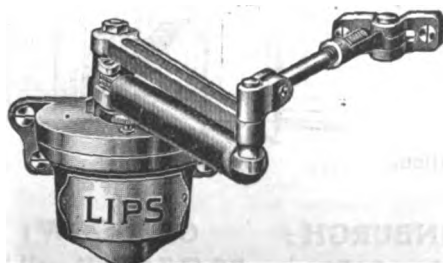
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects,

(Continued on page 7.)

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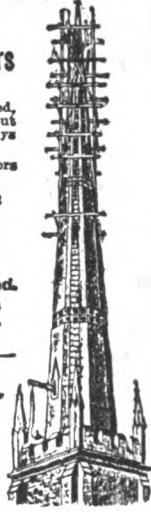
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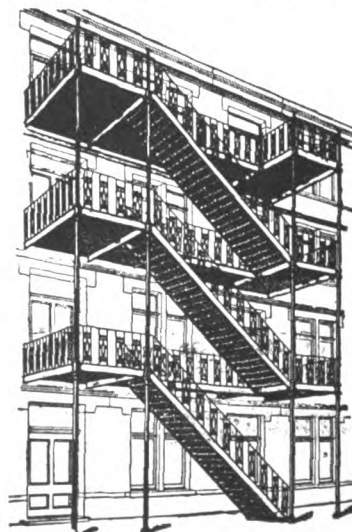
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together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

CONTRACTS OPEN.

BASINGSTOKE.—Aug. 21.—For internal and external repairs, decoration, re-drainage, and conversion into weights and measures office of The Danes, Basingstoke, for the Hants County Council. Deposit 10s. 6d. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

BELFAST.—Aug. 23.—For building new National schools at Lower Sydenham, Belfast, for the Strand Presbyterian Church. Messrs. Fennell & Clarke, architects, 2 Wellington Place, Belfast.

BURSLER.—Aug. 12.—For additions to parish offices, for the Guardians of Wolstanton and Burslem Union. Send names and £2 2s. deposit by Aug. 12 to Mr. W. F. Slater, Overhouse Chambers, Burslem.

CHAPEL-EN-LE-FRITH.—Aug. 21.—For construction of concrete service reservoir. Conditions, specification, bill of quantities and tender from the engineers, Messrs. Brady & Partington, Town Hall, Chapel-en-le-Frith, after August 7. Deposit £2 2s. Mr. J. B. Boycott, clerk to the Rural District Council.

CHELMSFORD.—Aug. 28.—For extension of fire engine station in Market Road. Mr. W. Smith, town clerk, 16 London Road, Chelmsford.

CHOPWELL.—Aug. 16.—For erection of sixteen to twenty houses at Chopwell, for the Blaydon District Council. Mr. G. Symon, surveyor, Council offices, Blaydon-on-Tyne.

CONGLETON.—Aug. 31.—For alterations at St. Peter's, St. James's, and St. Stephen's schools, for the Congleton Church of England Schools Joint Committee. Deposit £1 1s. Mr. J. Moir, Brereton Hall, Sandbach.

COVENTRY.—Aug. 15.—For erection and completion of garage at the rear of shops, Gosfort Street, for the Coventry Perseverance Co-operative Society. Mr. W. H. Hattrell, architect, 23 Hertford Street, Coventry.

DARLINGTON.—For two pairs of semi-detached houses and one pair of semi-detached cottages, for the Darlington Garden Suburb Co., Ltd. Mr. G. W. Davis, M.S.A., L.R.I.B.A., architect, High Row Chambers, Darlington.

DEAL.—Aug. 14.—For the enlargement of the schools in North Wall Road, for the Deal Education Authority. Deposit £1 1s. Mr. C. L. Crowther, architect, Deal.

DEVIZES.—Aug. 13.—For erection of a mortuary at the workhouse. Mr. O. Sheppard, clerk, Union Offices, Devizes.

DEWSBURY.—Aug. 14.—For erection of an ambulance shed at Ravensthorpe, for the Corporation. The Borough Surveyor's office, Town Hall, Dewsbury.

DISS.—Aug. 12.—For erection of a cottage at the water-works, Diss, Norfolk, for the Diss Urban District Council. Deposit £1 1s. Messrs. Morgan & Buckingham, architects, 1 Upper King Street, Norwich, and at Diss.

DRONFIELD.—For erection of a picture palace. Send names and address to Mr. J. S. Elshaw, Hallows Lane, Dronfield.

DUDLEY HILL.—Aug. 15.—For the various works required in erection of a picture palace, Tong Street, for Messrs. Goodall's Pictures, Ltd. Messrs. Howorth & Howorth, architects, Old Bank Chambers, Cleckheaton.

EXETER.—Aug. 10.—For the erection of Children's Homes, for the Guardians. Send applications and £1 1s. by August 10 to Mr. R. M. Challice, architect, 14 Bedford Circus, Exeter.

GATESHEAD.—Aug. 26.—For erection of new entrance lodge, Saltwell Cemetery. Deposit £1 1s. Mr. N. P. Pattinson, borough engineer, Town Hall.

IRELAND.—For alterations at Belfast Head Post Office. The Post Office, Belfast, and the Office of Public Works, Dublin.

IRELAND.—Aug. 23.—For erection of coastguard station at Laurence Cove, Bere Island, County Cork. Deposit £1. The present Coastguard Station, Laurence Cove, and District Office of Public Works, Cork.

IRELAND.—Sept. 18.—For the construction of Government Offices in Upper Merrion Street, Dublin. Deposit £5 5s. The Secretary, Office of Public Works, Upper Merrion Street, Dublin.

LANGHO (NEAR BLACKBURN).—Aug. 13.—For the erection of new workroom at the Inebriate Reformatory. Deposit £2. Mr. Henry Littler, 16 Ribblesdale Place, Preston.

LOCK'S HEATH.—Aug. 19.—For erection of an additional classroom for fifty children at Lock's Heath Council School, Hants. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

LONDON.—Aug. 13.—For foundations of new offices for the Public Trustee and Lunacy Commissioners, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. H. A. Collins, at H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Aug. 22.—For alteration and extension of boiler house at the workhouse, Swaffield Road, Wandsworth, for the Guardians. Deposit £2. Mr. F. W. Piper, clerk, Guardians' Offices, St. John's Hill, Wandsworth.

LONDON.—Sept. 11.—For proposed additional room and work in connection therewith at the offices, 45 Upper North Street, Poplar, E., for the Poplar Board of Guardians. Send applications and £2 2s. deposit by August 26 to Messrs. J. & W. Clarkson, architects, 136 High Street, Poplar, E.

MORVAL.—Aug. 20.—The Small Holdings Committee of the Cornwall County Council invite tenders for the erection of farm buildings and a dairy at Lidcott Farm, Morval. The County Land Agent, County Hall, Truro.

PONTYPRIDD.—Sept. 2.—For erection of proposed new offices in Courthouse Street, Pontypridd, for the Guardians. Deposit £3 3s. Messrs. A. O. Evans, Williams & Evans, architects, Court Chambers, Pontypridd.

RADCLIFFE.—Aug. 14.—For alterations and additions to Radcliffe technical school, for the Radcliffe Education Authority. Deposit £2. Mr. H. Littler, architect, 16 Ribblesdale Place, Preston.

ROTHERHAM.—Aug. 31.—For erection of an extra unit at the destructor works in Rawmarsh Road, for the Corporation. The Borough Engineer's Office, Town Hall, Rotherham.

RUGBY.—For conversion of present Brookfields stables into a cottage, and for various minor alterations and decorative work in the hospital and Brookfield, for the Building Committee of the Hospital of St. Cross. Deposit £1 1s. Messrs. J. D. & T. L. Hoper, Albert Street, Rugby.

SCOTLAND.—Aug. 12.—For the several works required in connection with the proposed erection of a caretaker's box and lavatories in West College Street open space, Glasgow. The Office of Public Works, 64 Cochrane Street, Glasgow.

SCOTLAND.—Aug. 21.—For the construction of steel verandah platform roofs and a passenger footbridge at the north end of the new station, for the Aberdeen Joint Station Committee. The works comprise about 410 tons of steel and cast-iron work, and about 29,000 square feet of patent glazing. Deposit £1 1s. Mr. J. A. Parker, engineer, 80 Guild Street, Aberdeen.

SCOTLAND.—Aug. 23.—For the mason, smith, joiner, plumber, slater, plasterer, asphalt, glazier, tile, and painter's work for school to be erected at Kinglassie, for the Kinglassie School Board. Deposit 10s. 6d. Mr. G. C. Campbell, architect, Methil.

SHREWSBURY.—Aug. 12.—For supplying and fixing emergency staircase at St. Michael's Schools, for the Education Committee. Mr. W. Chapple Eddowes, borough surveyor, The Square, Shrewsbury.

SOUTHEND-ON-SEA.—Aug. 17.—For erection of a lodge and refreshment room at Southchurch Hall Park, Southend-on-Sea, for the Corporation. Deposit £1 1s. Mr. E. J. Elford, M.I.C.E., borough engineer and surveyor. Mr. H. J. Worwood, town clerk, Southend-on-Sea.

STAVERTON.—Aug. 17.—For alterations to farm buildings and water supply at Sparkwell Farm, Staverton, Devon. Messrs. Michelmores & Son, land agents, Gate House, Totnes.

WALES.—Aug. 16.—For erection of three shops, with coach-house, at Cymmer, Glyncoirwg. Mr. P. J. Thomas, architect, Bridgend.

WALES.—Aug. 19.—For additions and alterations to Wesley Church, Treforest. Mr. F. Hill, confectioner, Park Street, Treforest.

WALES.—Aug. 31.—For building new stores at Llandilo, for the Farmers' Co-operative Society, Ltd. Messrs. G. Morgan & Son, architects, 24 King Street, Carmarthen.

WEYBRIDGE.—Aug. 14.—The Commissioners of H.M. Works and Public Buildings are requiring tenders for the erection of Weybridge new head post office. Deposit £1 1s. H.M. Office of Works, Storey's Gate, S.W.

WILLINGTON QUAY.—For erection of new infant school at Willington Quay-on-Tyne. Send names to Mr. P. L. Browne, architect, Pearl Buildings, Northumberland Street, Newcastle.

THE Hull Picture Selection Committee have purchased out of the Ferens Fund the painting "Farewell," by Lord Leighton, P.R.A., for £1,250.

THE completed plan for the new Co-partnership and Suburb Trust extensions at Hampstead shows an area of 412 acres, on which 3,208 houses are to be erected, providing for a population of between 15,000 and 20,000. Sixty acres will be devoted to open spaces and wooded lands, and one of the recreation grounds will cover 20 acres. Two-thirds of the new area will be developed by the Co-partnership Tenants' Society, and an innovation will be the provision of a market square, in which it is proposed the tenants shall sell their garden produce.

TENDERS.

BRADFORD.

For the several trades required in erection of a test work-house at Daisy Hill Mr. F. HOLLAND, architect, Bradford.

Accepted tenders.

Booth & Sons, Bradford, masons	£2,313	0	0
Obank & Sons, Thackley, joiners	1,300	0	0
Hainsworth, Gillington, Bradford, plumber	837	10	0
J. W. & G. Sugden, Bradford, plasterers	530	0	0
Wright, Leeds, slaters	390	0	0
Brightside Foundry and Engineering Co., Sheffield, heating	348	0	0
Parsons & Co., Bradford, steelwork	238	10	0
Hanson, Bradford, painter	108	18	7

GLOUCESTER.

For erecting a fire station at Bearland, for the Gloucester City Council.

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KINGSTON.

For the widening of Kingston Bridge, for the Surrey and Middlesex County Councils' Joint Committee.

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Mowlem & Co., Ltd.	67,500	0	0
SCOTT & MIDDLETON, LTD., Victoria Street, Westminster (accepted)	64,230	0	0

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For extension of Camberwell car-shed and sub-station, for the L.C.C. tramways.

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Holland & Hannen	31,500	0	0
Holloway	31,345	0	0
F. & H. F. Higgs	30,970	0	0
Charles Wall, Ltd.	30,792	0	0
Downs	30,349	0	0
Lawrance & Sons, Ltd.	30,187	0	0
Rowley Bros.	30,113	0	0
Kerridge & Shaw	29,405	0	0
BOWYER, LTD. (recommended)	28,954	7	4
Architect's estimate	29,389	0	0

For extending the staircase to Globe Road school, Bethnal Green, for the L.C.C.

Bailey	£840	0	0
Parrott & Isom	629	0	0
Munday & Sons	628	0	0
Symes	620	0	0
Vigor & Co.	587	0	0
HORSWILL (recommended)	583	0	0
Architect's estimate	560	0	0

For erection of shops in White Hart Lane.

	Amount of Tender.	Extra for Concrete Floors
Coxhead	£3,834	£75
Nicholls & Son	3,665	95
Monk	3,490	75
Roberts & Co., Ltd.	3,450	106
Downs	3,405	66
Holloway	3,383	60
Lawrence & Son	3,356	70
ROWLEY BROS. (recommended)	3,236	55
Architect's estimate		3,620

MAIDSTONE.

For the erection of buildings, for Messrs. G. Foster Clark & Co., Ltd., Barker Road.

Corben & Co.	£8,988	0	0
Barden & Mead	8,895	0	0
Cox Bros.	8,857	0	0
Elmore & Son	8,691	0	0
WALLIS & SONS, Maidstone (accepted)	8,689	0	0

SCOTLAND.

For the masonry and structural steel and iron work of new training college for teachers in Dundee, for the St. Andrews Provincial Committee. Mr. T. M. CAPPON, F.R.I.B.A., Dundee.

Accepted tenders.

Binny & Co., Dundee, mason work . . .	£26,000	0	0
Bladen & Co., Ltd., Glasgow, steel and iron work . . .	1,887	0	0

SHERBORNE (DORSET).

For erection of new headquarters in Acreman Street, Sherborne, for the Territorial Force Association for the County of Dorset, 57 High West Street, Dorchester. Mr. F. T. MALTBY, A.M.I.C.E., surveyor.

Gillingham	£2,490	0	0
Jesty & Baker	2,362	11	10
Burt & Vick	2,218	0	0
Pittard & Son	2,097	0	0
Marrick & Son	2,057	0	0
Bartlett	1,934	0	0
Guppy & Son	1,900	0	0
MOORE & SON, Sherborne (accepted) . . .	1,735	0	0

STOKE-ON-TRENT.

For the erection of a covered fish market.

MEIKLEJOHN & SON (accepted)	£265	0	0
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SWAFFHAM (NORFOLK).

For proposed alterations and additions to Hammond's Grammar School, Swaffham. Messrs. LACEY & UPCHER, architects, 6 Upper King Street, Norwich.

Harvey	£1,288	0	0
Hannant	1,260	0	0
Hurn & Sons	1,221	0	0
Larner	1,201	6	0
Luds	1,146	16	0
Jeffries	1,144	19	0
Peeke-Vout	1,093	16	0
Howes	1,049	4	0
SMITH, Bunwell (accepted)	1,021	0	0

THORNBURY.

For the extensions of the workhouse infirmary buildings. Messrs. OATLEY & LAWRENCE, architects, Bristol.

Cowlin & Sons	£997	0	0
Ridd & Co.	979	0	0
Demmery & Sons	945	0	0
Tucker Bros.	927	10	6
Chown	869	0	0
PITCHER & SONS, Thornbury (accepted) . . .	816	18	0

WALBOTTLE.

For the erection of fifty-eight houses for the Newburn Urban District Council. Mr. T. GREGORY, surveyor, Newburn.

T. CHARLTON, Newburn (accepted)	£9,970	7	10
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WALES.

For building a new school (accommodation 514) at Garnant, Amman Valley, for the Carmarthenshire County Council. Mr. W. V. MORGAN, A.R.I.B.A., County architect, Carmarthen.

D. J. Thomas	£7,790	0	0
Evans & Edwards	7,730	0	0
Rees & Sons	7,690	0	0
Davis	7,540	0	0
W. Evans	7,452	0	0
Jones Bros.	7,400	0	0
Evans & Sons	6,886	0	0
Thomas & Co.	6,848	0	0
HOWELLS & SON, Llandeibie (accepted) . . .	6,480	0	0

For erection of a house at Romilly Park, Barry. Messrs. IVOR JONES & PERCY THOMAS, architects, Cardiff.

Rendell	£1,613	0	0
Francis	1,600	16	9
Griffiths & Son	1,537	0	0
Fisher	1,510	15	10
Vickery Bros.	1,459	10	0
Britton	1,448	0	0
S. J. MARTYN, Barry (accepted subject to amendments)	1,416	4	10

WEST HAM.

For an electric light installation at the Forest Gate Sick Home, 95 Forest Lane, Forest Gate, E., for the Guardians of the West Ham Union. Mr. J. WILLIAMS DUNFORD, architect, 100c Queen Victoria Street, E.C.

Foot & Milne	£2,304	0	0
Waring & Withers	2,043	0	0
Ryan & Son	1,958	0	0
Newbald & Son	1,849	0	0
Duncan Watson & Co.	1,750	0	0
West Ham Corporation	1,730	0	0
Polden & Co.	1,645	0	0
Lund Bros. & Co.	1,615	0	0
Christie	1,598	0	0
Saville & Walton	1,595	0	0
Durell Walker & Co.	1,498	0	0
Cathcart & Co.	1,475	0	0
Pinching & Walton	1,425	0	0
Malcolm & Allan	1,400	0	0
Cash & Co.	1,359	0	0
New Century Light Co.	1,307	0	0
Fryer & Co.	1,303	0	0
Weston & Sons	1,301	0	0
Godfrey	1,298	0	0
Hammond & Co.	1,276	0	0
Pilkington	1,274	0	0
Whitehead	1,259	0	0
Williams & Bach	1,250	0	0
Hancock & Rixon	1,249	0	0
Newton	1,215	0	0
Tilley Bros.	1,197	0	0
Holmes & Sons	1,180	0	0
Halsey	1,146	0	0
Herring & Son	1,090	0	0
Tredegars	1,085	0	0
W. R. REYNOLDS, LTD., East Ham (accepted)	993	0	0
Mech. and Elec. Engineering Co.	987	0	0
Architect's estimate	1,270	0	0

WINCHCOMB.

For alterations and additions at the Workhouse Infirmary. Messrs. PHILLOTT & GEORGE, architects, Cheltenham.

Building.

Tilt	£2,780	17	2
Wilson	2,562	0	0
Dorse	2,464	0	0
Billings	2,162	0	0
NICHOLLS, Gloucester (accepted)	2,084	0	0

Heating.

Feetham	£215	0	0
Tilt	160	0	0
Nicholls	149	0	0
Dorse	147	0	0
Brightside	145	0	0
Wilson	130	0	0
STEPHENS & FINCH, Cheltenham (accepted) . . .	123	0	0

WELLINGBOROUGH.

For alterations and extensions at the Park Street Council school, for the Northants Education Committee. BROWN & SON, Wellingborough (accepted) £4,713 18 5

THE Surrey County Council are about to carry out at Brookwood Asylum the centralisation under one roof of the work now carried on at the boiler houses and electric light station with a view to saving the cost of working expenses. Messrs. Handcock & Dykes, the engineers, have estimated the inclusive cost involved at £6,500, and the resultant saving at £1,188 per annum.

THE Leeds City Council last week by a large majority approved a big street improvement scheme proposed in connection with the extension of the Infirmary, towards which a fund of £150,000 is now being raised. The Council will spend £85,000 on the acquisition of slum property near the Infirmary, and construct a new street 60 feet wide.

THE Gorseinon Co-partnership Housing Society last week sent up a deputation to the Public Works Loans Commissioners to ask for a loan of £45,000 for the purpose of erecting about 300 houses for the working classes on Garden City lines at Gorseinon, where overcrowding has several times been the subject of questions in Parliament. Mr. Beddoe Rees, architect, formed one of the deputation.

COMPETITION NEWS.

BECKENHAM.—The Education Committee are about to organise a competition for a proposed elementary school among architects who have had considerable experience in this class of work. Intending competitors should send in their names by Monday, August 12, to the assessor, Mr. A. W. S. Cross, F.R.I.B.A., 46 New Bond Street, W.

BULGARIA.—With reference to the notice in "Competitions Open," relative to a competition of designs for (1) a new Royal Palace and (2) new Law Courts at Sofia, H.M. Legation at that city have now forwarded a copy of a revised programme which takes the place of that first issued. Architects must submit their designs by December 1 to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the revised programme (in French), together with drawings, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street.

BURMA.—In our issue of June 28 we announced that the Municipality of Rangoon (Burma) invited architects to enter into a competition for the designing and supervising of the erection of a new municipal building. Honorariums of £300, £200, and £100 are offered. In addition to the particulars then given we now understand that plans of the site may be obtained on payment of £1 deposit from Messrs. Ogilvy, Gillanders & Co., Sun Court, 67 Cornhill, E.C.

CANADA.—With reference to the notice in "Competitions Open" relative to a competition of designs for a monument to be erected at Ottawa to his late Majesty King Edward VII., at a cost not exceeding 35,000 dols. (about £7,200), H.M. Trade Commissioner for Canada now reports that the date of the receipt of designs has been extended to November 1. Designs in the form of sketch models in plaster on a scale of $1\frac{1}{2}$ in. to the foot should be sent to Mr. Eric Brown, Director of the National Art Gallery, Ottawa, Canada. The design may take the form of a portrait, statue, or a symbolic memorial, and will be judged by the Advisory Arts Council for the Government of the Dominion of Canada. Communications regarding the competition should be addressed to the Secretary, Public Works Department, Ottawa.

CHELTONHAM.—The Town Council considered on Friday last, the 2nd inst., the report of the Municipal Offices Sites Committee. The Mayor explained that eight designs had been sent in from local architects, and that the committee were evenly divided on two. As, however, no one of the designs sent in could be carried out for the sum stipulated (£11,000) they were unable to award the premium. The committee recommended that they be authorised to consult with the architects sending in the two best plans, "with a view to consider whether modifications can be made." A member proposed that the President of the British Institute of Architects be requested to appoint an architect to report on the two plans referred to. This was seconded. After a long discussion, however, in the course of which opposition was expressed to the proposed site on the Winter Garden, a further amendment for referring the matter of the plans back to the committee was carried.

HARTLEPOOL.—The Town Council on Wednesday last decided to advertise for plans for the erection of a school at Throston, to replace existing buildings.

TOWN PLANNING AROUND DONCASTER.

DR. DUNNE, the medical officer for the Doncaster rural district, points out that the development of the South Yorkshire coalfield is affecting Carcroft, Edlington, and Askern, where active building operations are in progress. The modern colliery, as established here, may be assumed to take from three to five years in sinking, and when fully developed will employ 3,000 men and boys, forming the centre of a mining community of from 12,000 to 15,000 persons. The next two or three years, the doctor says, are critical ones in the development of the district. At present, owing to the rural character of the places where these collieries are being sunk, it is possible, with the powers that Parliament has placed in the hands of the local authority under the Housing and Town Planning Act, 1909, to lay down the broad lines on which each place shall develop. It is necessary to look ahead some ten or twenty years. The mining population is coming almost entirely from Nottinghamshire and Derbyshire, as the new collieries are largely being developed by colliery proprietors from those counties. Coal mining is destined to employ about 20,000 to 25,000 colliers by the next census.

large and comprehensive lines, to be initiated in the district where so many local authorities are concerned, yet within the administrative area of the Doncaster rural district there are several districts where less ambitious, but equally useful, schemes of town planning can engage attention. Doncaster, with the mining townships which are springing up all around at a distance of from five to seven miles, presents unlimited scope for the energies of the town planner. There will be large mining communities of from 10,000 to 15,000 people at any of the following places by the next census: Askern on the north, Carcroft, Adwick-le-Street, Edlington, and Warmsworth on the west, Rossington on the south, and in all probability Armthorpe and Barnby Don on the east. Perhaps the best time for initiating a town plan has gone by for Askern and Carcroft, and the same is probably true of Edlington; but the "door of opportunity," spoken of by the Archbishop of York, is still ajar. Rossington, Armthorpe, and Barnby Don present areas where a town plan might be considered with advantage to future generations. The doctor points out that if a town plan had been adopted at Carcroft, embracing an area lying in a circle with a radius of a mile or a mile and a half from the pit shaft, the development which is taking place in that neighbourhood would have been on orderly lines, instead of the present unsystematic method.

Reference is then made to what is contemplated and what is actually being done in several places. At Edlington 823 houses will eventually be built, sites for recreation grounds and for places of worship having been reserved, whilst at Askern, a colliery village, covering some fifty-five acres, the erection of 1,000 houses is in contemplation. All these houses will be wanted by 1916, as it is anticipated that coal will be reached by next March. A colliery village on a small scale is in contemplation at Owston, where the Balcroft Colliery Company have acquired land, and at Rossington the colliery company intend erecting a model village of 1,000 houses. The doctor speaks of the Woodlands model village as one of the healthiest communities in the district. The average number of houses per acre is eight, but in the Park district there are only five to the acre. Last year at the Woodlands village there were only two deaths from enteritis and one notification of enteric fever, and this originated outside the district.

THE Birmingham City Council are making arrangements for the lease to a syndicate of the Aston Reservoir property for a term of thirty-six years at an annual rent of £1,500, subject to a rebate during building. The syndicate propose to convert the reservoir into a sort of White City.

MESSRS. BRIGGS, WOLSTENHOLME & THORNLEY, architects, have been instructed to submit an amended scheme for the proposed Town Hall at Wallasey. Their original competition scheme was estimated to cost £123,000; this amount was subsequently reduced to £110,700 and again to £102,000. The Town Council now desire that a further reduction of 15 per cent. shall be obtained.

A PROPOSAL is on foot to establish a public auction mart in the West End of London, and a suitable building in an excellent position has been found available for the purpose at the eastern corner of Piccadilly and Dover Street. The promoters have had many promises of support from good quarters, and the scheme is expected to materialise shortly. Particulars may be obtained from the joint secretaries and managers, Messrs. H. Gibson and E. J. W. Hider, 68A Piccadilly, W.

THE Manchester Ship Canal Company have entered into an agreement with the Manchester Dock and Warehouse Extension Co., Ltd., who constructed the No. 9 dock and transit sheds and leased the property to the company for the term of 99 years dating from the year 1902, under which they have undertaken to provide on the same terms as before the sum of £400,000 for the construction of a second grain elevator and increased transit shed accommodation and other appliances at the Manchester docks.

BIRMINGHAM City Council last week sanctioned a town planning scheme for East Birmingham, at a cost of £69,000. The district comprised in the scheme covers an area of 1,443 acres, and Mr. Neville Chamberlain explained that this area had been divided into three zones, in one of which eighteen houses to the acre would be allowed; in another, which was more or less agricultural, twelve houses to the acre; and in the third, fifteen houses to the acre. Provision had also been made for three factory areas.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects and others are invited to submit full particulars for insertion in this weekly list.)
ENGLAND.

BERKSHIRE.

Bisham.—Cottage, Quarry Woods, for Sir H. J. Vansittart Neale.

Bray.—"Compton Chase," Windsor Road: additions for Mr. C. M. Steele.

Cookham.—"Lodge Lodene," Greys: additions for Mr. D. Jay.

Pair of cottages, Bath Road, Highway Estate, for Mr. T. B. Bissley.

Hurley.—Six cottages, Parkwood, for Sir C. Henry, Bart.

Maidenhead.—Cottage, Malvern Road, Furze Platt, for Mr. B. Webb.

Cottage and motor garage, "Somerlea," Maidenhead Court, for Mr. J. B. Kennedy.

Pinkney's Green.—"Moorlands": additions and alterations; also to gardener's cottage, for Mr. C. F. Kearley.

CHESHIRE.

Bickley.—St. Winifred's Church: Vestry. Mr. Hopley, architect.

Birkenhead.—Town Hall, Wallasey.

St. Mark's Church: Tower (£900).

Whaley Bridge.—Offices for the Central Co-operative Stores and Society.

Wilmslow.—Catholic Church.

CORNWALL.

Wadebridge.—Parochial Hall, St. Breock.

DERBYSHIRE.

Clowne.—Parish Church: enlargement (£2,500).

Derby.—Boys' Secondary School (£12,000).

Girls' Secondary School (£10,000).

Two Council Schools (£20,000).

Morton.—Parish Church: extension (£850).

DEVON.

Exeter.—Royal Albert Memorial: men's hostel.

DORSET.

Weymouth.—Flats, St. Leonard's Road. Mr. S. Jackson, architect; also

Alterations to "Lambourn," Glendinning Avenue.

Two houses, Bentpath Avenue, for Mr. J. T. Whettam, junr.

Four houses, King's Road, Radipole, for Mr. T. J. Clarke.

Lock-up shops, John's Court, Lower Bond Street, for Mr. W. Smith.

DURHAM.

Crookhill.—Sunday School, for the Stargate Wesleyan Society (£1,000). Mr. G. Bell (of Newcastle), architect.

Mr. T. Charlton (of Newburn), contractor.

Seaton Carew.—Council School.

ESSEX.

Burnham-on-Crouch.—Two cottages, Coney Hall, for Messrs. Strutt & Parker.

Chelmsford.—House, Swiss Avenue, for Mr. Clough.

House, Goldlay Road, for Mr. T. G. Gozzett.

HAMPSHIRE.

Bournemouth.—Garage, Admiralty Road: additions for Messrs. Blachford Brothers.

Alterations, Lansdowne Crescent, for Messrs. Farrow's Bank, Ltd.

Additions to Convent of the Cross, Parkwood Road.

"The Fancy Fair," Hinton Road, for Mr. Beale.

Additions to Royal Bath Hotel.

House, plot 154, Talbot Avenue, for Mr. J. W. Davis.

Three houses, Portman Crescent, for Mr. R. Holly.

Two houses, Moorfield Grove, for Mr. A. Vine.

Pair of houses, Bemister Road, for Mr. A. J. Long.

House, corner of Boscombe Road and Southbourne Cliff Drive, for Mr. R. Elliott.

House, Leamington Road, for Mr. F. Holly.

House, plot 368, Milton Road, for Mr. S. M. Davis.

House, plot 28, Muccleshell Road, for Mr. R. Denning.

House, plot 55, Naseby Road, for Mr. E. Pearce.

Pair of houses, Roberts Road, for Mr. J. Houston.

"Ailsa Lodge," Stourwood Avenue: additions for Mr. T. G. Head.

"The Knowle," Meyrick Park Crescent: additions for Miss A. M. Newton.

"Nelson Villa," Curzon Road: additions for Mr. W. H. Price.

"Thurley," Lowther Road: additions for Mr. Paterson.

House, plot 346, Portchester Road: additions for Messrs. George & Harding.

Saugeen School, Manor Road: additions for Mr. P. H. Evans.

Vicarage, Windham Road, for Rev. T. F. Malpas.

KENT.

Bromley.—Workhouse: additions and alterations.

Chatham.—Cottages, Martin's Court, Union Street, St. Margaret: additions for Mr. W. Hurdman.

House, Patten's Lane, St. Margaret: additions for Mr. E. J. Simmons.

St. Catherine's House, Patten's Lane, St. Margaret: additions for St. Catherine's Charity.

Villa, Goddington Road, Strood Intra, for Mr. R. H. Cooper.

Hartley.—Mission Hall.

Hollingbourne.—Workhouse: additions. Mr. Gardner, engineer.

Lydd.—Council School: alterations, &c. Mr. W. H. Robinson, F.S.I. (of London), architect.

Maidstone.—Two houses, Curzon Road, for Messrs. Barden & Head and Lynn.

Warehouse, stables, &c., Hedley Street, for Mr. W. Bourne.

Orpington.—Motor garage, stables, and cottage, Crofton Pond Hill. Messrs. Treasure Bros., architects.

House, plot 13, The Drive, for Mr. R. Cooke.

LANCASHIRE.

Bolton.—Infirmary: Nurses' Home. Messrs. Henderson & Brown, architects.

"Swan" Hotel premises: additions. Messrs. Cunliffe & Pilling, F.R.I.B.A., architects.

Westhoughton.—Central Council School (£9,000) and Manual Training Centre (£600).

LEICESTERSHIRE.

Barlestone.—Council Schools.

Blaby.—Workhouse additions and alterations (£2,300).

Copt Oak.—(Supplementary to June 12)—Vicarage (£1,700).

Desford.—Bungalow, Leicester Road, for Mr. E. Robinson. Out-offices for the County Council.

Nailstone.—House, for Mrs. E. Haywood.

Peckleton.—Two cottages, for Lady Lovelace.

MIDDLESEX.

Ealing, North.—Wesleyan Church, Hall and School, Lindfield Road (£1,600).

Twickenham.—Council School (£11,000).

NORTHAMPTONSHIRE.

Towcester.—Houses, for the R.D. Council.

NORTHUMBERLAND.

Ponteland.—Public Hall (£1,500). Mr. D. Hill (of Newcastle-on-Tyne), architect.

NOTTINGHAMSHIRE.

Pleasley Hill.—St. Barnabas's Church: extensions (£1,550).

SHROPSHIRE.

Albrighton.—Wesleyan Church Schoolroom.

SOMERSET.

Minehead.—Working-class houses. Council Surveyor.

STAFFORDSHIRE.

Burslem.—Union Offices: alterations. Mr. W. F. Slater, architect.

Newcastle-under-Lyme.—Congregational Sunday School: extensions (£1,100). Mr. T. H. Smith (of London), architect. Mr. A. Plevin, contractor.

Stoke-on-Trent.—C. of E. Schools, Fenton: additions and alterations.

Wednesbury.—Public buildings, baths, &c.: extension. Messrs. Guest & Sons (of Stourbridge), contractors (£8,500).

SUFFOLK.

Stowmarket.—Council School.

SURREY.

Croydon.—Salvation Army citadel, Brighton Road.

Guildford.—House, Avonmore Avenue, for Mr. W. Buller.

Hersham.—Public Elementary School for 500 places.

WARWICKSHIRE.

Birmingham.—Birmingham and Midland Women's Hospital: extension (£4,000). Mr. F. Martin, architect.

Coventry.—Factory additions, Spon Street, for Messrs. J. Rotherham & Sons.

Additions and alterations to premises, Bray's Lane and West Orchard, for the Coventry Perseverance Co-operative Society, Ltd.

WARWICKSHIRE—continued.

Coventry—continued.

Extensions to electricity works, Sandy Lane.
 Additions and alterations to premises, Spon Street, for the West End Club.
 Alterations to premises, West Orchard, for Mr. A. Mountford.
 Additions and alterations to premises, 26 Little Park Street, for Mr. J. R. Austin.
 Extensions, Park Side, for the Deasy Car Co.
 Additions and alterations to Boston House, Stoney Stanton Road, for the Wesleyan Methodist Trustees.
 Garage, &c., Gosford Street, for the Coventry Perseverance Co-operative Society, Ltd.
 Two houses and cycle shed, Broadway, for Mr. A. E. Stewart.
 Six houses, Hearsall Lane, for Mr. T. Philpotts.
 House, Holbrooks Lane, for Mr. F. J. Blackford.
 Two houses, Holbrooks Lane, for Messrs. Dunn & Vickers.
 House, Stoke Park, for Mr. E. O. C. Howells.
 House and shop, Albany Road, for Mr. C. F. Woodall.
 Six houses, Harefield Road, for Mr. E. J. Twigg.
 Nine houses, Highland Road, for Messrs. A. Goldthorpe & Co.
 Two houses, Mickleton Rd., for Messrs. C. Luck & Son.
 Two houses, Newdigate Road, for Mr. E. J. Rawdon.
 Six houses, Quinton Rd., for Messrs. T. Hancox & Co.
 House, Radford Road, for Messrs. Robinson Bros.
 Three houses, Raleigh Road, for Mr. C. Blockley.
 Three houses, Raleigh Road, for Mr. F. Burton.
 House, St. Michael's Road, for Messrs. Jervis Bros.
 House, Shackleton Road, for Mr. E. Jordan.
 Four houses, Sir Thomas White's Road, for Mr. W. Vaughan.
 Two houses, Sovereign Road, for Mr. F. H. Turner.
 Two houses, Stanway Road, for Mr. C. E. Needham.
 House and stable, Chandos Street, for Mr. F. J. Brookfield.
 Ten houses, Oliver Street, for Messrs. Kendall & Son.
 Extensions to machine shop, Canal Road, for Messrs. A. Herbert, Ltd.
 Additions to printing works, White Friars Lane, for Messrs. H. Smith & Son.
 Stabling, Cook Street, for Messrs. Masser & Mattocks.
 Extensions, Crow Lane, for Rudge-Whitworth, Ltd.
 Picture Palace additions, Hales Street, for Messrs. Pell & Co.
 Electric Theatre, Gosford Street, for Mr. F. H. Turner.

YORKSHIRE.

Marfleet.—"New Inn": re-building. Mr. W. Bail, F.R.I.B.A. (of York), architect.
 Masham.—Town Hall (£3,000). Mr. J. Houle (of Harrogate), architect.
 Middlesbrough.—No. 23 Corporation Road. Messrs. Moore & Archibald, architects; also
 Four dwelling-houses, Appleton Road, Linthorpe.
 Wincobank, High.—Fifty-five cottages. City Architect, Sheffield.

WALES.

Port Talbot.—Poole's Palace, Aberavon: alterations (£2,000).
 Ruthin.—Pendref Congregational Chapel: schoolroom. Mr. F. A. Roberts (of Mold), architect.

SCOTLAND.

Canonbie.—(Supplementary to August 2.)—Public Hall (£1,100). Mr. R. Burnet (of Langholm), architect.
 Separate trade contractors.
 Glasgow.—Drapery warehouse addition at 30-34 Paterson Street, for Scottish Co-operative Wholesale Society, Ltd.
 Taynult.—Board School: additions and alterations. Mr. G. W. Brenan, C.E. (of Oban), architect.

IRELAND.

Belfast.—Prudential Insurance Co.'s premises, Wellington Place. Mr. P. Waterhouse, M.A., F.R.I.B.A. (of London), architect.
 National Schools for the Strand Presbyterian Church. Messrs. Fennell (F.R.I.A.I., F.R.I.B.A.), & Clarke, architects.
 Donaghadee.—Orange Hall (£1,000). Mr. C. A. Aitkin (of Belfast), architect. Mr. W. Cochrane (of Belfast), contractor.
 Dublin.—Ice factory and cold storage, for the Dublin Pure Ice Co., Ltd. Messrs. H. Williams & Co. (of London), architects.

Dundalk.—St. Patrick's Cemetery: mortuary chapel (£1,200).
 Limavady.—Court House (£2,000).

Londonderry.—St. Columba's Boys' National School, Long Tower, Derry. Mr. D. Conroy, architect.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Root, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 4,183. Feb. 19, 1912.—Anton Kleber, 5 Wilhelmstr., Saarbrücken, Prussia. Improvements in adjustable casings for the construction of walls by means of plastic materials. This invention relates to casings for the construction of walls, and particularly inner partition walls, by means of plastic materials, such as plaster, cement, or concrete, and has for its object to provide an improved casing, the various parts of which may be adjusted according to the thickness of the walls to be constructed. Fig. 1 is an elevation, and fig. 2 a sectional plan. The reinforcement for the construction of the wall, *a*, is effected by tying oblique wires, *b*, and horizontal wires, *c*, which are further strengthened by vertical wires, *d*. These wires, *b*, *c*, *d*, are fastened at their opposite ends to the floor, side-walls, and ceiling already constructed. In fig. 1 the lower part of the wall *a* is being constructed about a door frame 2. The boards of the casing or mould have laths, *f*, to which flat iron bars, *g*, are fastened by means of screws, so that the boards or planks placed above each other are prevented from being displaced inwardly. The casings are put in place as follows: The sockets, provided with flanges, have inner screw-threads engaged by the outer screw-threads of another socket or sleeve. *i*. If the thickness

Fig. 1.

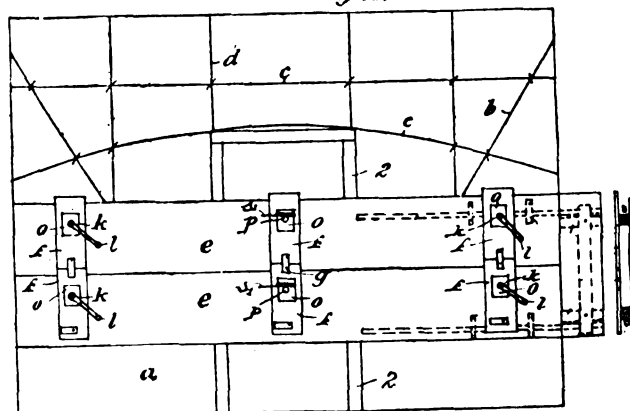
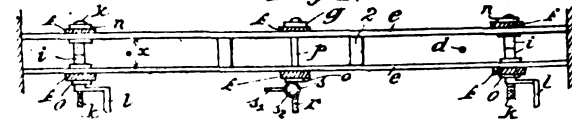


Fig. 2.



of the wall be x , each sleeve or socket, *i*, is unscrewed until it extends to a distance $\frac{x}{2}$ from the socket, whereupon the latter is placed into the boards, *e*, of the casings and a bolt, *k*, is inserted into the sockets *i*. A crank handle, *l*, screwed on to the end of said bolt is rotated until the ends of the two sockets, *i*, touch each other, whereby the thickness of the wall is determined. The bolt, *k*, has at one end a square portion engaging a corresponding hole in the plate, *n*, whereby the bolt is prevented from being rotated. In order to tightly close the joint, another plate, *o*, is placed upon the opposite end of the bolt *k*. Both plates, *n* and *o*, are pressed against the boards, *e*, of the casings. The boards of the opposite casings are connected as described on both sockets and bolts. Intermediate bolts, *p*, are arranged at suitable intervals, and extending through the laths, *f*, which are provided with metal plates, *g*. The bolts, *p*, which are preferably square in cross-section, have a number of holes, *r*, intended to receive the eccentric pin, *s*², of a circular disc, *s*, provided with a handle, *s*¹. It will be seen that while the bolts, *k*, with the parts connected therewith serve to determine the thickness of the wall, the bolts, *p*, serve merely to stay the boards of the casings. The flanges prevent dirt or plaster from entering the sockets, so that the inner screw-threads thereof are constantly clean and ready for easy operation. June 26, 1912.

PATENT SPECIFICATIONS PUBLISHED AUGUST 1, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 15,479. July 3, 1911.—William Turnbull, architect, Lambton Quay, Wellington, New Zealand. Flushing apparatus for water closets.

15,763. July 6, 1911.—Panels, Ltd., 54 Duke Street, Birkenhead, and W. P. Thompson, 6 Lord Street, Liverpool. Manufacture of panels.

15,929. July 10, 1911.—R. N. Mirza, 37 Bedford Street, Liverpool. Reinforced concrete construction.

16,002. July 10, 1911.—J. S. E. De Vesian, 38 Victoria Street, Westminster. Harbours, piers, and other marine structures.

16,193. July 13, 1911.—J. T. Corner, C.B., 32 Victoria Street, Westminster. Joint packing.

16,433. July 17, 1911.—Farbenfabriken vormals Friedrich Bayer & Co., 217 Koenigstrasse, Elberfeld, Germany. Process for preserving wood.

16,783. July 21, 1911.—J. H. Dulton, 10 Fletcher Drive, Grassendale, Liverpool. Safety hooks for cranes and other purposes.

18,270. Aug. 12, 1911.—J. J. Fraser, 16 Kersland Street, Hillhead, Glasgow. Production of pictorial slabs and the like.

20,037. Sept. 9, 1911.—J. W. R. Bryant, Haselor Manor, Alcester, Warwick. Construction of gates.

21,216. Sept. 26, 1911.—C. B. Brewer, Hyattsville, Prince George, Maryland, U.S. Ventilators.

22,110. Oct. 7, 1911.—Oliver Wilkes, 39 Cairns Street, Walsall. Locks.

23,253. Oct. 21, 1911.—Octavious Gray, 34 Lausanne Road, Hornsey. Telescopic lifts.

23,517. Oct. 24, 1911.—Callenders Cable and Construction Co., Ltd., Hamilton House, Victoria Embankment, S.W., and H. Anderson, Lingfield Villa, Halt Robin Road, Belvedere, Kent. Hydraulic apparatus for opening and closing doors.

25,553. Nov. 16, 1911.—J. H. Punchard, 17 Nutford Place, Edgware Road, W. Concrete and other compositions.

26,704. Nov. 29, 1911.—C. H. Schol, Allendorf, Dillkreis, Germany. Manufacture of light slabs, bricks, and the like from blast furnace slag.

28,272. Dec. 15, 1911.—W. H. Smither, The Broadway, Winchester. Hot water supplies for domestic and other purposes.

422. Jan. 5, 1912.—Read & Morrill, Inc., 179 Joralemon Street, Brooklyn, New York. Moulds for concrete walls, partitions, floors, ceilings, and the like.

959. Jan. 12, 1912.—Richard Clayton, Deepfields, near Bilston, Staffs, and E. B. Crump, 45 Tunnel Street, Roseville, Coseley, near Bilston. Gas fires.

1,283. Jan. 16, 1912.—Timothy Kelly, Aedabron Villa, Dromard, Sligo. Door closing appliances.

1,455. Jan. 18, 1912.—W. M. Still & Sons, Ltd., 29 Charles Street, Hatton Garden, E.C. Carburetting device for air gas apparatus.

2,026. Jan. 25, 1912.—Ernest Owers, 15 Yew Grove, Cricklewood, N.W. An improved chisel for slotting, mortising, rebating or recessing timber.

2,220. Jan. 27, 1912.—Date claimed under International Convention Feb. 20, 1911. R. P. Hill, Auckland, N.Z. Cleaning water and other pipes or mains.

3,916. Feb. 16, 1912.—Richard Freund, 16 Halmgasse, Vienna IX., Austria. Portable chemical fire extinguishing apparatus.

3,928. Feb. 16, 1912.—Date claimed under International Convention Feb. 23, 1911. G. A. Kofoed, cement moulder, St. Knudsvej, Ronne, Denmark. Machine for producing interlocking tiles of cement.

4,244. Feb. 20, 1912.—Hazenbrown Co., Brockton, Mass. Cementing machine.

6,213. March 12, 1912.—J. W. Shephard and F. A. Jones, both of Wagga Wagga, New South Wales. Attachment for tops or cocks.

6,458. March 15, 1912.—J. H. McCoy, Harrisville, Butler, Penn. Concrete water and like tanks and methods of manufacturing same.

6,677. March 18, 1912.—Lee Hamilton, Le Claire, Scott, Iowa, U.S. Safety device for lifts or elevators.

7,546. March 28, 1912.—J. G. White, 21 Wilton Street, Old Basford, Notts. Fastening mechanism of sliding doors and the like.

7,801 and 7,802. April 1, 1912.—Robert Green, Roecliffe, near Boroughbridge, York. Improvements in roofing tiles, brick and tile manufacture.

8,596. April 11, 1912.—J. A. Murdocke, 11 New Union Street, E.C. Hinges.

12,139. May 22, 1912.—Date claimed under International Convention Dec. 1, 1911. Diamant-Brickett-Werke, G.m.b.H., 2511 Taubenstr., Berlin, W. Briquette presses.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

At a meeting of the Council held on July 24 the following applicants were recommended for admission:—To Membership: John Morley, surveyor and engineer, Ardsley U.D.C.; H. W. Lockton, deputy borough surveyor, Newark; W. H. Scott, assistant surveyor, Ruislip-Northwood U.D.C.; W. W. Earwaker, sanitary surveyor, St. Columb R.D.C. To Associate Membership: W. A. Walker, surveyor's office, Stourbridge; J. C. Stevenson, assistant surveyor, Ulverston U.D.C.; S. Grisdale, district main road surveyor, Cumberland C.C.; S. L. Kumar, P.W.D., Punjab, India; R. U. Harper, assistant highway surveyor, Chester-le-Street R.D.C. Transfer to Membership: W. H. Butler, assistant County surveyor, Cumberland. Transfer to Associate Membership: J. H. Marsh, surveyor's office, Worsley U.D.C.; A. R. Clucas, assistant city engineer, North Vancouver, B.C.

The consideration of papers presented by members of the Institution will take place at the September Council meeting, with a view to awarding the premiums already announced.

Mr. W. Louis Carr has kindly extended invitations to members to view his town plan, maps No. 4 and 4a with general provisions. They may be seen at his offices, Northwood, Middlesex.

Mr. Frank Latham was nominated President and Mr. Thos. Mundy Honorary Treasurer for the year 1912-3. The nominations for Vice-Presidents will be announced later.

CRYSTAL PALACE SCHOOL OF ENGINEERING.

CERTIFICATES gained during the summer term by the students of the Crystal Palace School of Practical Engineering were distributed at the lecture room there last week by Sir Maurice Fitzmaurice, supported by Mr. I. W. Wilson (Principal), Mr. Maurice Wilson (Vice-Principal), and the examiners, Mr. H. G. Foster Barham, Mr. H. T. Creasy, and Mr. Burr.

Sir M. Fitzmaurice, in the course of his address, said he knew from personal experience that the school was keeping up the reputation it had for many years, and being a member of the Council of the Institute of Civil Engineers, he noticed that a large number of the old students of this school came forward for election as associates, with good credentials, and a record of good work. He had had, moreover, old students of the school on his staff, and their work had always been satisfactory.

Much of the engineering work going on abroad was being done with English capital, and those who found the capital wanted English engineers to carry out the work. In case of disputes between engineers and contractors, they must always be fair, as a reputation for fairness was one of the greatest assets they could have. They had got to learn something every day, and they had to become old before they found out what a little they knew. In conclusion he urged that they must work hard, be loyal to the men who paid them, and get a reputation for honesty and fairness in all their dealings, and if they did this, they would be a credit to the Crystal Palace Engineering School.

MR. R. H. FORSTER writes as follows to the Editor of the *Newcastle Daily Journal* relative to the excavations at Corbridge:—Your readers will be interested to hear that we have this morning found a large altar, bearing the inscription:

DISCIPVLI
NAE
AVGVSTORVM
LEG. II
AVG.

"To the Discipline of the Emperors (dedicated by) the Second (Augustan) Legion."

Two days ago we found a centurial stone, originally erected by the Seventh Cohort of the Thirtieth Legion. Yesterday there came to light a striking relief of Hercules, brandishing a club. The excavations are now in full working order, and several interesting buildings are being uncovered.

GREAT CENTRAL RAILWAY SUMMER SERVICE.

THE Great Central Railway Company announce that their summer train service came into operation on July 15.

The chief innovation relates to the 8.50 A.M. breakfast car express from Sheffield to London (Marylebone) and the 8.20 A.M. restaurant car express from Manchester. The former now starts from Manchester (London Road) daily at 7.40 A.M. instead of at 7.45 A.M. on Mondays only as hitherto, and is in connection at Penistone with a new train from Bradford, Halifax and Huddersfield. This improvement supplies a useful early service from Manchester and other towns to London. The 8.20 A.M. breakfast car express from Manchester (London Road) to London (Marylebone) runs to Bath, Bristol and Taunton, with through carriages to Ilfracombe. The return train will leave Ilfracombe at 12.17 P.M. and Taunton at 3.3 P.M.

Between London (Marylebone) and Stratford-on-Avon, via Woodford and Hinton, the service is increased and accelerated. A new train in connection with the 10 A.M. express from London (Marylebone) will reach Stratford-on-Avon at 12.12 P.M. In the opposite direction the train will leave Stratford-on-Avon at 10 A.M., and will make the same connection with the Manchester breakfast car express due to arrive at Marylebone at 12.3 P.M.

As in previous years, the tourist express from Liverpool, Warrington, Stockport, Manchester and Sheffield to Yarmouth and Lowestoft is being run. These trains are composed of corridor carriages with restaurant car.

The combined rail and sea trips to the Isle of Man and Llandudno proved very popular last year, and are repeated.

A tourist express leaves Sheffield (Victoria) at 7.30 A.M. on Mondays, Tuesdays and Saturdays in connection with the steamers from Liverpool to Douglas, Llandudno and other places. The return train starts from Liverpool (Central) at 8.33 P.M. A tourist express leaves Sheffield (Victoria) at 9.5 A.M. and Manchester (Central) at 10.50 A.M. for Aberystwyth and other resorts on the Cambrian Railway. The return train leaves Aberystwyth at 1.50 P.M., with connections from the principal stations on the Cambrian Railway.

VARIETIES.

THE Electric Supply Committee of the Birmingham City Council are about to advertise for a constructional engineer at a salary of £400 rising to a maximum of £500 per annum.

IN the Slade School of Fine Art, at London University, a special diploma course has been instituted, enabling students who take full-time courses, and who satisfy the conditions governing the diploma course, to obtain a University Diploma in Fine Art.

THE mediæval building in St. Michael's Square, Southampton, known as Tudor House, which has been purchased by the Corporation for £4,200, and its interior adapted into a museum for historical relics connected with Southampton in particular, and with Hampshire generally, was last week declared open by the Mayor of the borough.

THE scheme for the erection of a new Custom House at the pierhead at Liverpool was before the Liverpool City Council last week. The Chancellor of the Exchequer has promised to erect a building, the cost of which is estimated at not less than £100,000, provided the Corporation contribute the site. The Mersey Docks and Harbour Board have promised £10,000 towards the site, and to convey to the Corporation the site and buildings of the old dock office in Canning Place. The recommendation to provide a site was finally agreed to.

ON Friday, July 26, the Bishop of Ripon dedicated a new tower to Leeming Church, near Bedale, Yorks. The tower is built of local bricks with traceried windows of stone, and with stone pinnacles and battlements. It is 12 feet square and about 48 feet high, and has a peal of eight tubular bells by Harrington & Latham, of Coventry. The carving was executed by Messrs. Martyn, of Cheltenham. The sole contractors were Messrs. T. & J. Willoughby, of Northallerton. The architect was Mr. H. D. Pritchett, L.R.I.B.A., of Darlington, the total cost without bells being about £505.

H.M. TRADE COMMISSIONER for Canada reports to the Intelligence Department of the Board of Trade that, according to the "Montreal Gazette" of July 3, a company has been formed, with a total authorised capital of 6,500,000 dollars (about £1,336,000), for the establishment of a chain of terminal warehouses from Montreal to the Pacific Coast, in connection with the Grand Trunk Pacific railway systems. The names of the companies, &c., to

which the foregoing notices relate may be obtained by British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, London, E.C.

MESSRS. BRAITHWAITE & KIRK, engineers, of West Bromwich, have taken an important contract for six steel spans for a bridge on the Eastern Bengal State Railway, over the Lower Ganges. The remaining nine spans will be supplied by the Cleveland Bridge and Engineering Co., of Darlington. The contracts were secured in face of severe American and Continental competition. Each span will be 359 feet long, and will weigh 1,300 tons. The completion of this Indian undertaking, including approaches, &c., will, it is said, involve an outlay of about one and a quarter millions sterling.

ACCORDING to an American trade report, the production of Portland cement in the United States in 1910 reached 76,549,951 barrels, valued at £13,641,160. This is equivalent to 12,986,152 long tons, and is an increase over the output of the previous year of 11,558,520 barrels, or nearly 18 per cent., and an advance in value of £3,069,489, or more than 29 per cent. The remarkable growth of the American production of this cement is shown in the fact that this increase alone is greater than the total output in 1900. In addition to Portland cement, there were also produced 1,139,239 barrels of natural cement, and 95,951 barrels of puzzolan cement, a total of 77,785,141 barrels.

ON Saturday week Mr. and Mrs. John E. Sheldon entertained the directors and staff of Messrs. Harris & Sheldon, Ltd. (the well-known Birmingham shopfitters), at their house, "Moor Croft," Barnt Green. The chief event of the afternoon was a cricket match of 25 a side between the brass-foundry department staff and the draughtsmen and estimators of the joinery department; naturally with such a large field the difficulties of opposing batsmen were enormous, much humour being occasioned thereby. Mr. R. G. Richards captained the "B" department, and Mr. Sheldon the "J" department, and at the interval tea was served on the terrace, the Misses Sheldon ably assisting to entertain the guests. After the game was over parties were made up for woodland strolls, whilst others availed themselves of the many opportunities provided for amusement by games of tennis, bowls, &c., the lawns being in a remarkably good condition. At dinner covers were laid for some sixty guests, and a very happy party it was, everything being done that was possible to give the staff a really good time. In the cool of the evening, the garden, roseries, &c., were visited, their beauty appealing strongly to the many city-dwellers; going home time came all too soon, and the thanks of all present were given to Mr. and Mrs. Sheldon for providing so enjoyable an outing.

TRADE NOTES.

MESSRS. JOHN WARNER & SONS, of "The Spitalfields Bell Foundry," Spelman Street, London, N.E., have in hand two bells to be rung by electricity, for the New Girls' Training College, Swansea, and New Schools, Down Lane, Tottenham. The same firm has also supplied similar bells to the undermentioned places:—Risley Avenue Schools, Tottenham; Crowland Road Schools, Tottenham; Oldbury Road Schools, Enfield; Percy Road Schools, Kilburn; Cecil Road Council Schools, Gravesend; Lavender Road Schools, Enfield; St. Mark's Mission Hall, St. Helens, Lancs; St. Andrew's Church, Wimbledon; St. Paul's Church, Ealing; St. Luke's Church, Hornsey; St. Matthias Church,ulse Hill, S.W., &c.

MESSRS. SMITH, MAJOR & STEVENS, LTD., London and Northampton, have issued a leaflet on the subject of "Safety Locks and Automatic Lifts" in general and their own patent lock in particular. They point out that in a safety lift lock three distinct things have to be performed—viz. to shut the door or gate, latch it, and finally give current to the machine. Instead of trying to make these three things occur simultaneously, Messrs. Smith, Major & Stevens have brought out a patent lock which does them in an ordered sequence. First, the door or gate must be completely closed: till that is done nothing more can be effected. Next follows the latching of the door, and until that is securely done it is impossible to give current to the machine. Finally, current is given. On opening the door the reverse order is equally definite. They claim that by their system the "Safety Lock" is worthy of its name.

THE ring of eight bells of St. Mary's Church, Enfield, Middlesex (tenor 20 cwt.), are to be re-hung. The work of restoration has been entrusted to Messrs. John Warner & Sons.

THE Architect and Contract Reporter.

FRIDAY, AUGUST 16, 1912.

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The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

•• As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BELGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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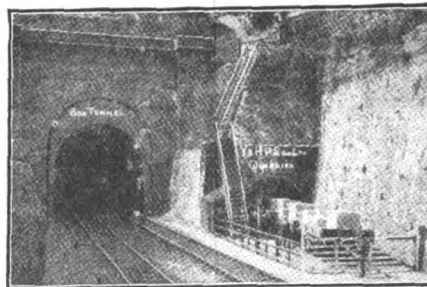
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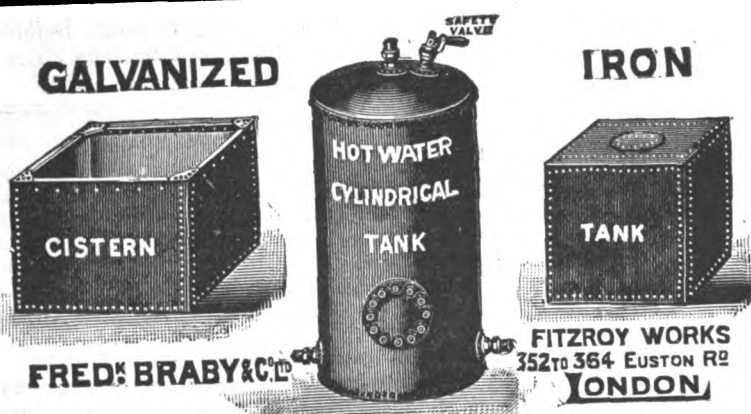
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CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelli Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelli. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelli.

CONTRACTS OPEN.

BOLTON-ON-DEARNE.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Bolton-on-Deerne new school—viz., builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Mexborough. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

BUILTH WELLS.—Aug. 28.—For building a fire station, &c. Mr. T. Smith, M.S.A., surveyor, Market Hall Buildings, Builth Wells.

CHELMSFORD.—Aug. 28.—For extension of fire engine station in Market Road. Mr. W. Smith, town clerk, 16 London Road, Chelmsford.

CHEPSTOW.—Aug. 20.—For the reconstruction of premises at Chepstow to be used as a drill hall, for the Monmouthshire Territorial Force Association. Deposit £2 2s. Messrs. Habershon & Fawckner, F.R.I.B.A., architects, 41 High Street, Newport, Mon.

CONGLETON.—Aug. 31.—For alterations at St. Peter's, St. James's, and St. Stephen's schools, for the Congleton Church of England Schools Joint Committee. Deposit £1 1s. Mr. J. Moir, Brereton Hall, Sandbach.

CRAIGHEAD.—For the erection of twenty houses for Messrs. Thos. Hedley & Bros. Send applications to Mr. J. Wm. Rounthwaite, A.R.I.B.A., 13 Mosley Street, Newcastle-on-Tyne.

CUDHAM.—Sept. 21.—For the erection of a Council School to accommodate 120 scholars, at Cudham, Biggin Hill, for the Kent Education Committee. Send application and £1 1s. deposit by Sept. 4 to Mr. Fras. W. Crook, Secretary, Caxton House, Westminster, S.W. (See advertisement.)

DARTFORD.—Sept. 2.—For the execution of certain works at the workhouse, West Hill. Messrs. Tait & Hobbs, architects, Lowfield Street, Dartford.

EAST BARNET.—Aug. 29.—For alterations and additions at the Brunswick Park County Council school, East Barnet, for the Hertfordshire County Council. Deposit £2 2s. Mr. U. A. Smith, county surveyor, Hatfield.

GATESHEAD.—Aug. 26.—For erection of new entrance lodge, Saltwell Cemetery. Deposit £1 1s. Mr. N. P. Pattinson, borough engineer, Town Hall.

GLOUCESTER.—Aug. 31.—For erection of proposed infirmary in Great Western Road, for the Guardians. Send names by Aug. 31 to Mr. W. B. Wood, A.R.I.B.A., architect, 12 Queen Street, Gloucester.

GOLCAR.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works at Crow Lane Council school, Golcar—viz., additional classroom (builder, joiner, slater, plumber, plasterer, and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

HARROGATE.—For the whole of the work in connection with building the Theosophical hall and lodge premises in East Parade. Forward names to Mr. J. E. Reid, L.R.I.B.A., architect, Whitby Avenue, Heworth, York.

HARROW.—Aug. 30.—For the various works required in additions to ham and bacon factory at Harrow, for Messrs. John Adamson & Co., Ltd., Harrow and London. Send names and £1 1s. deposit at once to Mr. M. Johnstone, architect and engineer, 22 Lowther Street, Carlisle.

HUTHWAITE.—For the erection of a free library. Deposit £2 2s. Mr. E. W. Bostock, architect and surveyor, Huthwaite, Notts.

HYDE.—Aug. 31.—For erection of a public hall, police courts, offices, and other works in Corporation Street, Water Street, and Greenfield Street, for the Corporation. Deposit £3 3s. Mr. J. Diggle, A.M.I.C.E., borough surveyor, Town Hall, Hyde, Cheshire.

IRELAND.—Aug. 21.—For alterations and improvements at the Methodist church, Dunmanway. Messrs. Chillingworth & Levie, civil engineers and architects, 11 South Mall, Cork.

IRELAND.—Aug. 23.—For erection of coastguard station at Laurence Cove, Bere Island, County Cork. Deposit £1. The present Coastguard Station, Laurence Cove, and District Office of Public Works, Cork.

IRELAND.—Aug. 26.—For building new stables at their depot in East Hanover Street, for the Dublin Paving Committee. The City Architect, Municipal Buildings, Cork Hill, Dublin. Send £2 deposit to the City Treasurer, Municipal Buildings, Dublin.

IRELAND.—Sept. 9.—For the erection of New Dublin Metropolitan Police Station in Great Brunswick Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Sept. 18.—For the construction of Government Offices in Upper Merrion Street, Dublin. Deposit £5 5s. The Secretary, Office of Public Works, Upper Merrion Street, Dublin.

LANCHESTER.—Aug. 22.—For supply of a corrugated iron shed, for the Guardians. Mr. T. E. Taylor, architect, The Grove, Lanchester, Durham.

LEEDS.—Aug. 20.—For the various works required in the alterations to offices, Bedford Street, East Parade, for the Leeds Board of Guardians. Mr. G. Fredk. Bowman, architect, 5 Greek Street, Leeds.

LEEDS.—Sept. 4.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Leeds new telephone exchange. Deposit £1 1s. The Postmaster, Leeds Post Office.

LONDON.—Aug. 21.—For erection of Greenwich telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W.

LONDON.—Aug. 22.—For alteration and extension of boiler house at the workhouse, Swaffield Road, Wandsworth, for the Guardians. Deposit £2. Mr. F. W. Piper, clerk, Guardians' Offices, St. John's Hill, Wandsworth.

LONDON.—Sept. 2.—For the execution of certain alterations (chiefly in joinery and fittings) to dormitories, &c., at their infirmary, Cambridge Road, E., for the Bethnal Green Board of Guardians. Mr. D. Thomas, clerk, Bishop's Road, Victoria Park, London, N.E.

LONDON.—Sept. 11.—For proposed additional room and work in connection therewith at the offices, 45 Upper North Street, Poplar, E., for the Poplar Board of Guardians. Send applications and £2 2s. deposit by August 26 to Messrs. J. & W. Clarkson, architects, 136 High Street, Poplar, E.

LONDON.—Sept. 12.—For erection of the buildings required for an extension of their electricity works at Millfields Road, Clapton, N.E., on the river Lea, for the Hackney Borough Council. Messrs. Gordon & Gunton, architects, Finsbury House, Blomfield Street, E.C. Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney.

MARSHFIELD.—Aug. 19.—For erection of four houses at Marshfield, Mon. Send names by Aug. 19 to Mr. W. Rosser, architect and surveyor, Risca and Newbridge, Mon.

MINEHEAD.—Sept. 1.—For the erection of convenience and ladies' cloakroom on the sea front, Minehead, Somerset, for the Urban District Council. Deposit £2 2s. Mr. L. C. Webber-Incedon, clerk, 3 Bancks Street, Minehead, Somerset.

NEW WATH.—Aug. 23.—For the construction of a new stone road bridge at New Wath, near Goathland, for the Whitby Rural District Council. Drawings and specification may be seen at the office of Mr. J. Lyth, surveyor to the Rural Council, Whitby.

NORTHWICH.—Aug. 29.—For erection of public baths and wash-houses, for the Urban District Council. Deposit £2 2s. Mr. J. A. Cowley, clerk, Council Offices, Northwich.

PONTYPRIDD.—Sept. 2.—For erection of proposed new offices in Courthouse Street, Pontypridd, for the Guardians. Deposit £3 3s. Messrs. A. O. Evans, Williams & Evans, architects, Court Chambers, Pontypridd.

PORTLAND.—Aug. 29.—For erection of a brick pumping station and foreman's cottage near the Friar Waddon Road, Upwey, together with the provision, fixing, and setting to work of two borehole pumps and 136 h.p. Crossley gas engine with suction gas plant complete, for the Urban District Council. Deposit £3. Mr. R. S. Henshaw, waterworks engineer, Council Offices, Portland.

RAWTENSTALL.—Aug. 22.—For the materials and labour required in the erection of cottages on Carr Farm estate, for the Corporation. Deposit £2 2s. Mr. J. Johnson, borough surveyor, Rawtenstall.

ROMNEY MARSH.—For erection of a cottage near Brookland, Romney Marsh, for the Kent County Council. Mr. A. Barker, county land agent, 38 King Street, Maidstone.

ROTHERHAM.—Aug. 31.—For erection of an extra unit at the destructor works in Rawmarsh Road, for the Corporation. The Borough Engineer's Office, Town Hall, Rotherham.

SCOTLAND.—For the erection of a new bakery at Ratho Station, for the Hillwood Co-operative Society, Ltd. Deposit 10s. 6d. Messrs. Robert Murray & Son, surveyors, 50 George Street, Edinburgh.

SCOTLAND.—Aug. 22.—For the mason, joiner, plumber, plaster, slater, glazier, and steel works of new operating theatre and additional nurses' accommodation at East Poorhouse, for the Dundee Combination Parish Council. Mr. T. M. Cappon, F.R.I.B.A., architect, 32 Bank Street, Dundee.

SCOTLAND.—Aug. 23.—For the mason, smith, joiner, plumber, slater, plasterer, asphalt, glazier, tile, and painter's work for school to be erected at Kinglassie, for the

Kinglassie School Board. Deposit 10s. 6d. Mr. G. C. Campbell, architect, Methil.

SCOTLAND.—Sept. 2.—For executing the mason, bricklayer, and steel works of extension of Fish Market along Albert Quay. Mr. W. Dyack, M.Inst.C.E., burgh surveyor, Town House, Aberdeen.

SOUTHAMPTON.—Aug. 23.—For building proposed new offices, Central and Mobilisation Stores, Carlton Terrace, for the Territorial Force Association. Deposit £2 2s. Mr. R. H. P. Bevis, A.R.I.B.A., architect, Elm Grove Chambers, Southsea.

SOWERBY BRIDGE.—Aug. 23.—For the mason's, carpenter's and joiner's, ironfounder's, slater's and plasterer's, and plumber's work required in reinstating after fire at Lower Willow Hall Mills. Messrs. R. Horsfall & Son, architects and surveyors, 22a Commercial Street, Halifax.

STAFFORD.—For new central premises in Salter Street, for the Committee of the Stafford Industrial Co-operative Society, Ltd. Send names and £2 2s. deposit to the Architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

STOCKPORT.—Aug. 26.—For erection of a boundary wall adjoining the Stepping Hill hospital, Hazel Grove, for the Guardians of Stockport Union. Messrs. Peirce & Son, architects, St. Petersgate, Stockport.

SULBY.—Sept. 10.—For erection of a new chapel, for the Trustees of Sulby Wesleyan Chapel. Mr. J. E. Teare, Athol Street, Douglas.

TIPTON.—Aug. 31.—For erection of engine and boiler house, &c., at the Tipton Gasworks, on foundations prepared by the Council. Mr. S. O. Stephenson, engineer, Gasworks, Tipton.

TRURO.—Aug. 29.—For the erection of four residences at The Avenue, for Mr. W. Beard. Mr. Leonard Winn, architect and surveyor, 27 Boscawen Street, Truro, and the Free Library Chambers, Redruth.

WALES.—Aug. 21.—For contract No. 3 of proposed extensions of their works at Lower Penarth, near Cardiff, for the Directors of the South Wales Portland Cement and Lime Co., Ltd. The works comprised in this contract are heavy excavations, concrete, masonry, and brickwork, with other contingent items necessary for the erection of the various buildings and machinery foundations. Deposit £5. Mr. J. W. Rodger, architect, 14 High Street, Cardiff.

WALES.—Aug. 22.—For erection of a chapel in Pomeroy Street, Bute Docks, Cardiff, for the Trustees of the Mount Stuart Welsh Congregational Church. Deposit £1 1s. Messrs. James & Morgan, architects, Charles Street Chambers, Cardiff.

WALES.—Aug. 26.—For altering and repairing the following hotels for Messrs. A. Buchan & Co., Rhymney—viz., Tredegar Arms, Tredegar; Beaufort Inn, Beaufort. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WALES.—Aug. 27.—For the erection of an electric theatre in Pembroke Dock, South Wales. Deposit £1 1s. Mr. A. Claypoole, Starbuck House, Milford Haven.

WALES.—Aug. 31.—For additions and alterations to Holly Cottage, Ochry-Fool, Dyserth. Mr. J. Powell Jones, 33 High Street, Denbigh.

WALES.—Aug. 31.—For repairs and alterations to the Bethania C.M. schoolroom and vestry, Ruthin. Mr. F. A. Roberts, M.S.A., architect, Earl Chambers, Mold.

WALES.—Aug. 31.—For building new stores at Llandilo, for the Farmers' Co-operative Society, Ltd. Messrs. G. Morgan & Son, architects, 24 King Street, Carmarthen.

WANSTEAD.—Sept. 12.—For erection of workshops on a site adjoining the receiving homes, Aldersbrook Road. Send applications and £1 deposit by Aug. 24 to Mr. William Jacques, A.R.I.B.A., architect, 2 Fen Court, Fenchurch Street, E.C.

WENDRON.—Aug. 29.—For erection of a cloakroom and porch for the Wendron Three Cross Schools. Mr. B. J. Treloar, Crahan, Wendron, Cornwall.

WORTHING.—Sept. 2.—For the taking down, widening, and reconstruction of a portion of the sea pier at Worthing, Sussex, including the provision and erection of cast-iron piles, steel girders, beams, bracing, concrete floor, and other works. Deposit £5. Messrs. James Mansergh & Sons, engineers, 5 Victoria Street, Westminster.

YEOVIL.—For erection of an electric theatre, for Mr. A. Ward, Weymouth. Send names and £2 2s. deposit to Mr. P. B. Rigg, architect, Frome.

TENDERS.

HUDDERSFIELD.

For the various trades required in erection of additions to the Hillhouse Congregational Sunday School. Messrs. STOCKS & SYKES, architects, Huddersfield.

Accepted tenders.

Boothroyd, mason	£569	4	2
Ratcliffe, joiner	479	17	6
Brook, Hardcastle & Watson, heating engineers	171	0	0
Crossley & Co., plumbers	128	10	0
Jowitt, plasterers	103	0	0
Cook, concretor	87	9	3
Lunn & Cardno, painters	52	10	0
J. W. & R. Graham, electricians	48	0	0
Pickles Bros., slaters	32	10	0

All of Huddersfield.

ILKLEY.

For erection of an annexe to the King's Hall, for the Urban District Council. Mr. H. WEST, building inspector, Ilkley.

Accepted tenders.

G. Smith, Ilkley, mason and bricklayer	£1,314	15	6
Eagle & Mawson, Ilkley, joiners and carpenters	523	0	0
Barrett & Sons, Bradford, constructional engineers	430	0	0
Higginbotham & Sons, Idle, plumbers	299	0	0
D. Smith, Ilkley, plasterer and concretor	250	0	0
R. & T. L. Nelson, Ilkley, slaters	68	0	0

IPSWICH.

For erection of new premises, Princes Street, to replace those destroyed by fire, for Messrs. R. D. & J. B. Fraser, Ltd.

Grimwood & Sons	£14,793	0	0
Green	14,697	10	0
Lawrence & Son	14,324	0	0
Carter & Wright	14,283	0	0
Catchpole & Sons	14,156	0	0
Youngs & Son	13,822	0	0
Gibson & Sons	13,724	0	0
Kenney	13,550	0	0
Wallis	13,500	0	0
Roper	13,494	0	0
Ward & Son	13,450	0	0
Bennett	13,270	0	0

IRELAND.

For sundry additions and alterations to residence, Fermoy, County Cork, for Mr. F. J. W. Lucas. Mr. W. F. MAYE, C.E., architect, Fermoy.

Kellaher	£1,200	0	0
Creedon	1,025	0	0
Meagher & Hayes	1,010	0	0
T. O'MAHONY, Fermoy (accepted)	1,005	0	0

For the erection of baths and washhouses, for the Kingstown Urban Council.

WEAVER, Kingstown (accepted) £1,053 0 0

For the construction of a road from Lower George's Street to Northcote Avenue, for the Kingstown Urban Council.

HULL & Co., Ringsend (accepted) £1,049 0 0

LEYTON.

For erection of a school for girls and infants, and alterations to the present school, Church Road. Messrs. W. & J. H. JACQUES, architects, 2 Fen Court, E.C.

Strand Building Co.	£16,352	0	0
Brand, Pettit & Co.	15,510	0	0
Lawrance & Son	15,397	0	0
Webb & Co.	15,372	0	0
Davey & Armitage	15,138	0	0
Manders & Co.	14,868	8	10
Coxhead	14,448	0	0
Symes	14,430	0	0
Clark & Son	14,396	12	3
Willmott	14,380	0	0
Horswill	14,230	0	0
Maddison, Canning Town	13,629	0	0

LONDON.

For the erection of a police section house at Dalston. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor to the Metropolitan Police, New Scotland Yard, S.W.

Stapleton & Sons	£6,977	0	0
Lole & Co.	6,914	0	0
Minter	6,900	0	0
Shurmer & Son	6,750	0	0
Downs	6,692	0	0
Sabey & Sons	6,581	0	0
Harris & Wardrop	6,580	0	0
Perry & Co. (Bow)	6,580	0	0
Patman & Fotheringham	6,553	0	0
McCormick & Sons	6,543	0	0
Jarvis & Sons	6,340	0	0
Grover & Sons	6,293	0	0
Sheffield Bros.	6,192	0	0

WALES.

For erection of an administrative block at the workhouse, Merthyr Tydfil.

Jenkins	£4,131	10	0
Jones	3,865	0	0
Williams & Son	3,725	0	0
James	3,715	0	0
Morgan & Son	3,698	18	7
WARLOW & WARLOW, Merthyr (accepted)	3,314	9	11

For erection of new premises at No. 143 High Street, Merthyr Tydfil, for the Merthyr Gas Co. Mr. C. M. DAVIES, architect and surveyor, Merthyr Tydfil.

James	£2,125	0	0
Williams & Sons	2,035	0	0
Moss	1,993	0	0
Warlow & Warlow	1,937	15	0
SULLIVAN, Merthyr (accepted)	1,771	13	0

THE BRITISH FIRE PREVENTION COMMITTEE'S TESTS.

Reinforced Concrete Floor Test.—The British Fire Prevention Committee on Wednesday last undertook some supplementary loading tests with a reinforced concrete floor (submitted by the United States Steel Products Co.), which had been under fire and water test on July 24 last, the fire and water test having been a four-hour one, and the standard of "Full Protection," Class B, having been obtained. "Triangle mesh" was used as reinforcing material. The report of the test was given in our issue of July 26.

The centre bay of the floor, measuring about 15 ft. by 7 ft. and being 5 in. thick, was to be loaded to 5 cwt. per ft. super., and records were to be taken of the deflection at certain intervals, the object of the test being to show that a floor of this type is still serviceable after a severe fire.

The tests were conducted by a sub-committee under the direction of Mr. Max Clarke, F.R.I.B.A. There was a considerable attendance of members of the committee and officials from the various Government and municipal departments concerned, who were received by Mr. Edwin O. Sachs, F.R.S. Edin. (Chairman of the Executive), Mr. Ellis Marsland (Hon. Secretary), and other members of the Council. The Principal of the St. Petersburg Fire Service College, who is studying the testing arrangements of the committee, was among the visitors.

During the afternoon various other materials which had been under fire test during July were also exhibited.

Results of Tests.—The British Fire Prevention Committee announce that a series of fire tests with the flame-proofing of textiles treated by the Snowdon process have resulted in the process being classified as making the materials under review "non-flaming," which means that less than 5 per cent. of a square yard of treated material burns in 60 seconds on the application of flame. The materials under review treated by the Snowdon process were scenic canvas (for theatres), curtain net and art muslin (as used in bazaars), and flannelette. Wadding and thin paper (as used by drapers for Christmas decorations), treated by the same process, likewise obtained this classification in some supplementary tests.

Impending Tests.—The committee's official fire tests with "Cellit" (a non-inflammable celluloid) will take place at the end of September, and the tests with asbestos cement roofing materials early in October, when there will also be further fire tests with glazing.

MASTER PAINTERS AT CHESTER.

THE forthcoming visit of the National Association of Master Painters and Decorators to Chester from September 17 to 21, gives promise of being a great success.

The Association have engaged the American Roller Rink for the month of September, and also Pageant House for the Convention week.

In connection with the Convention a very interesting Exhibition of Decorative Art and Manufactures relating to house decoration will be held.

The Exhibition opens on the Tuesday morning, his Worship the Mayor of Chester presiding, and Sir William Lever, Bart., has promised to open the Exhibition.

The National Association has put in the forefront of its endeavours the importance of training the young men engaged in the trade to an appreciation of the beauty of their craft.

A carefully-graded scheme of education is drafted for the apprentices, commencing with boys in the first two years of their apprenticeship, which forms one section. Another section is for boys under eighteen in the middle period of their apprenticeship, and a third section is for boys in the last period of their training. The curriculum embraces plain painting in all three grades, as good, sound painting is the basis of the painting trade on which all other work is built, and the executive properly attach the greatest importance to boys being soundly taught in this part of their work.

Another section common to the three grades is that of lettering and sign-writing, which is both a useful and a beautiful art. Recent years have seen a big development of this phase of decorative art, and the apprentices have kept pace with the general taste.

The tasks in the three divisions represent distinct grades of skill.

The useful arts of graining and marbling, stencilling, stencil cutting, and lining are common to the two higher grades, and the senior division has more advanced studies set them in sketch book studies, coloured original designs for interior decoration, and a time test for ornamental painting, so that it will be seen that a large and instructive field of work is covered.

For young men out of their time, up to the age of twenty-five, the Association has, in conjunction with the sister Associations of Scotland and Ireland, established a Travelling Scholarship of the annual value of £50, realisable in Italy. This year the competition falls due at Chester, and some excellent work is anticipated.

During its existence the National Association has expended on its educational work upwards of £3,000.

The Exhibition of Manufactures will prove of especial interest to the general public no less than the trade.

Time was when paint and varnish manufacturers exhibiting sealed up their exhibits in elaborate glass cases, through which one peered at uninteresting bottles of glass varnish and oils and champagne glasses of dry colours, set out in symmetrical array. To-day, wiser in his generation, the manufacturer shows his wares applied in a decorative form that interests the public equally with the specialist. The result is that the public come to these exhibitions to see the latest thing in tasteful decoration in the way of wall-papers, enamels, water-paints, colours, stains and varnishes, and they rarely go away disappointed. Information is imparted and knowledge gained which in the days to come, when the necessary redecoration comes round, the master painter reaps the fruit of.

The executive anticipate a large influx of members from all parts of England and Wales, and big contingents from the sister Associations in Scotland and Ireland, which will make Chester busy the third week in September.

The Netherlands are sending two gentlemen to represent the National Association of Master Painters there, and one of them is to deliver a lecture on the old gateways and houses of Holland, illustrated by lantern slides.

The routine business of the Convention will follow the usual course.

THE late Mr. Francis William Godfrey, head of the firm of Collins & Co., builders, of Gloucester, left estate valued at £162,427 gross and £145,906 net personalty.

THE will has been proved of Mr. Jonas James Bradshaw, F.R.I.B.A., of Greenmount, Heaton, Bolton, architect and surveyor, of the firm of Messrs. Bradshaw & Gass, who died in April last, aged 75 years. He left estate of the gross value of £24,091, of which the net personalty has been sworn at £17,188.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.**A LIST OF WORKS PROJECTED OR COMMENCED.**

(N.B.—Local Authorities, architects and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.**BUCKINGHAMSHIRE.**

High Wycombe.—Primitive Methodist Church at Sands.

CORNWALL.

Charlestown.—Vicarage.

Morval.—Farm buildings and dairy, Lydcott Farm.

DERBYSHIRE.

Monsal.—Hospital: Crèche ward (£900).

DEVON.

Exeter (near).—Children's Home, Church Road, St. Thomas: isolation wards.

Newton Abbot.—No. 14 Wolborough Street: additions and alterations, &c. Messrs. Ellis, Son & Bowden, F.S.I. (of Exeter), architects.

DORSET.

Weymouth.—Pair of houses, Roman Road, Radipole, for Mr. A. J. Samways.

DURHAM.

Hartlepool.—Council School, Throston.

ESSEX.

Chelmsford.—House, Swiss Avenue, for Mr. W. Wright.

Dovercourt.—Ninety houses, &c. (£50,000.)

Tilbury.—Workmen's dwellings.

GLOUCESTERSHIRE.

Bristol.—Municipal tuberculosis dispensary.

HAMPSHIRE.

Bournemouth.—"Wrentham Lodge," Grove Road: additions for Mrs. Brewster.

Primitive Methodist Chapel Schoolroom, Bourne Valley (£1,200).

HEREFORDSHIRE.

Withington.—Wesleyan Church.

HERTFORDSHIRE.

Harpenden.—National Children's Home and Orphanage: various blocks.

KENT.

Beckenham.—Vicarage, St. Barnabas.

Chatham.—Club Room, St. John's Institute, Pazitt Street.

Six cottages, Elm Avenue, for Mr. A. G. Webb.

Two cottages, Wyles Road. Mr. Randall, junr., architect; also

Six houses, Ewart Road.

House, Athelstan Road, for Mr. H. P. Hughes.

Three houses, Maida Road, for Mrs. E. Waycott.

Sub-station, Magpie Hall Road, for the Kent Electric Power Company.

Dartford.—Public Hall.

Faversham.—Motor Garage, Preston Street, for Mr. P. Black.

Gravesend.—Gas Producer House: extension for Messrs. Henley's.

Lydd.—House, Hammond's Corner, for Mr. L. Wimble.

Margate.—Refuse destructor, Cliftonville.

Orpington.—"Lancaster Lodge," High Street: additions for Mr. A. Weirwood.

LANCASHIRE.

Bacup.—Weaving shed, Olive Mill, for Messrs. Hoyle Brothers.

Bolton.—Brewery extensions, Churchgate, for Mr. J. Kenyon.

House, Andrew Lane: Messrs. Bradshaw & Gass, F.F.R.I.B.A., architects.

Twenty-two houses in Ashworth Lane, Hesketh Avenue and off Blackburn Road, for Mr. G. Sykes.

Two houses, Belmont Road, for Messrs. Makin & Margisson.

Two houses, Junction Road, for Messrs. Andrews & Cowley.

Fourteen houses, Old Road, for Mr. G. Sykes.

Twelve houses, Daffodil Street, for Mr. P. W. Emery.

Four houses, Georgina Street, Hulton, for Messrs. Hughes Brothers.

Picture Hall, Blackburn Road, for Mr. W. F. Bowen.

Premises, Old Hall Street North: additions for Messrs. Adamson & Barlow.

Wilkinson Sanatorium, Astley Bridge: Ward. Messrs. Bradshaw & Gass, F.F.R.I.B.A., architects.

Congregational School, Derby Street: extensions for Mr. J. G. Varley.

LANCASHIRE—continued.

Great Lever.—Eight houses, Lever Edge Lane, for Messrs. Eckersley & Charnley.

Heaton.—Motor garage, Arden Lea, for Mr. A. H. Lord.

Lostock.—House, Wingates Lane, for Mr. T. Brindle.

LINCOLNSHIRE.

Benington.—Council cottages.

Caistor.—Isolation Hospital, administrative block, fever blocks, &c.

Lincoln.—Two houses, Kingsway, for Mr. C. Priestley.

Six houses, Derwent Street, for Mr. W. H. Close.

Two houses, Olive Street, for Mr. F. Berry.

Lodge, Greetwell Road, for Mr. C. Pratt.

Workshop, Free School Lane, for the Corporation.

Workshop, No. 107 Monks' Road, for Mr. A. E. Harp-
ham.

Woodhall Spa.—Gentlewomen's Home.

MONMOUTHSHIRE.

Abergavenny.—Domestic Arts Centre. Mr. J. Bain, F.R.I.B.A. (of Newport), architect.

Ebbw Vale.—Houses, Badminton Grove. Messrs. W. Harris & Son (of Bargoed and Tredegar), architects.

Marshfield.—Four houses. Mr. W. Rosser (of Newbridge and Risca), architect.

New Tredegar.—Public Elementary School, Phillipstown. Mr. J. Bain, F.R.I.B.A. (of Newport), architect; also

George Town Girls' Council School.

Tredegar Arms Hotel: alterations, &c. Mr. T. Roderick, architect.

NORTHAMPTONSHIRE.

Far Cotton.—Council Schools alterations.

NORTHUMBERLAND.

Blyth.—Elementary School, South Farm Subway (£13,850). Council surveyor.

Newcastle-on-Tyne.—Armstrong College: Agricultural Department, College Road (£12,500). Mr. W. H. Knowles, F.R.I.B.A., architect.

East Walker Council Schools: alterations (£3,200).

Walker Gate Council School (£10,000).

NOTTINGHAMSHIRE.

Brinsley.—School for 100 places.

OXFORD.

Banbury.—Forty working-class cottages (£6,200).

SHROPSHIRE.

Atcham.—Church School alterations, &c.

Clive.—P. Methodist Minister's residence.

SOMERSET.

Axbridge.—Workhouse Laundry extension.

STAFFORDSHIRE.

Gnosall.—Council School (£1,000).

SUFFOLK.

Barham.—Infectious diseases hospital: observation block.

SURREY.

Farnham.—Workmen's cottages, Crondall Lane.

Two houses, Edward Road, for Mr. W. H. Purchase.

Two blocks of semi-detached houses, Hale Road, for Mr. Cave.

"Foxwood," Great Austins: additions for Mrs. A. Robins.

Richmond.—Three houses, North Road, for Messrs. Boore & Parker.

No. 4 Ormond Road: additions. Mr. E. J. Partridge, F.S.I., architect.

SUSSEX.

Horsham.—"South Holmes," Roffey: additions. Messrs. King & Chasemore, architects.

Council Girls' School, Denne Road: enlargement. Mr. H. P. Roberts, architect.

WARWICKSHIRE.

Birmingham.—Cottage baths, Lower Dartmouth Street.

Cottage baths, Coventry Street: extensions (£1,500).

Coventry.—Boiler house and store, Northey Road, for Messrs. Webster & Bennett.

WORCESTERSHIRE.

Barbourne.—Parish Church of St. Stephen's: enlargement.

Worcester.—Council School for 750 places.

YORKSHIRE.

Barnoldswick.—R.C. School.

Doncaster.—Refuse destructor (£3,800).

Technical School (£12,350).

Harrogate.—Theosophical Hall, East Parade (accommodation for 300 people). £1,500.

Howden.—Isolation hospital (£3,200).

Selby.—R.C. School for 100 places.

Sheffield.—U. Methodist School, Firth Park (£1,650).

Power House, Neepsend: engine room extension. Messrs. Abbott & Bannister, contractors (£6,750).

WALES.

Beaufort.—Beaufort Inn: alterations, &c. Mr. T. Roderick, architect.

Cardiff (near).—Two cottages, Llanedarne. Mr. W. Harpur, M.Inst.C.E., City engineer, architect.

Denbigh.—Salem Wesleyan Chapel: alterations. Mr. J. Roberts, contractor.

Lower Penarth.—Extension of Works, for South Wales Portland Cement and Lime Co. Mr. J. W. Rodger, architect.

Tonyrefail (near).—Twenty-nine houses, Thomastown. Mr. P. J. Jones (of Pontypridd), architect.

Wrexham.—Tuberculosis dispensary for Denbigh and Flint counties.

SCOTLAND.

Arbroath.—Public baths.

Clydebank.—Dalmaur U.F. Church Hall for 160 persons.

Coatbridge.—Board School for 600 places, corner of Bank and Drumpellier Streets.

Crocketford.—Board School (£1,000).

Edinburgh.—Picture house, Princes Street.

Glasgow.—Tuberculosis hospital (£60,000).

Kirkcubbin.—Board School for 200 places.

Largs.—Garage. Messrs. Fryers & Penman, architects.

Paisley.—Convent, East Buchanan Street: addition.

IRELAND.

Limerick.—Sixty-six artisans' dwellings. Mr. J. Connolly, contractor (£12,500).

Middleton.—Fifteen working-class dwellings, St. Mary's Terrace. Mr. D. Daly, Council engineer. Mr. J. J. Coffey, contractor (£2,600).

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 9,910. April 24, 1911.—An improved building block and method of using same. W. A. Richards, 11 Dumfries Place, Cardiff, and E. R. Sutcliffe, of Leigh, Lancashire. This invention relates to the production of a special form of building block, and to the method of using same; it is applicable especially, though not necessarily, to bricks, or blocks which are made in a mould, either by hand or machine. The object of the invention is to produce such a form of block that it can be used without material alteration in all the various edging or corner positions to be found on a building, and especially which can be readily produced in a single mould without alteration of its inside perimeter. Figs. 1 and 2

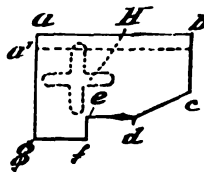


Fig. 1

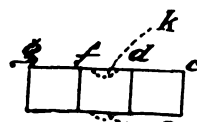
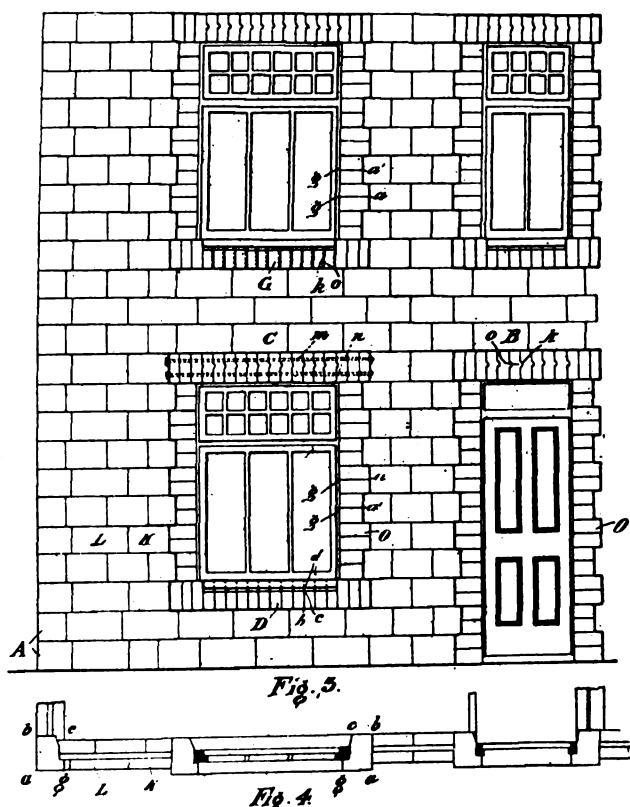


Fig. 2

show the form of the special block in plan and elevation respectively. Fig. 3 shows the front elevation of a house wall. Fig. 4 shows a plan of the wall. The two faces, *g a*, *a b*, of the perimeter of the block form a right angle, of which the face *a b* is longer than the face *a g*, so that when laid vertically over each other with a long face and a short face adjacent to each other, as at A, in fig. 3, a serrated effect is presented to each side wall forming the corner A of the building, by which proper bonding of the corner is effected to the plain blocks, such as K, L. The blocks, A, are shown in the drawing double the thickness of those used for the window and door openings, but two separate blocks could be used instead. The bonding for the window blocks is effected by putting a flat packing piece in the mould during manufacture, so that certain of the blocks are narrower across the faces *a g*, which is thereby reduced to *a' g*, as shown in fig. 1. The blocks, such as O, for the vertical sides of the openings are usually set with all the projections *e, f, g* on the

outside of the wall; the bevil faces *d*, *c* will then form a finished edge on the interior to the timber window frame. In the case of blocks for an arch, as shown at B, a rib, *o*, will



be left on one block and a recess, *k*, on the adjoining one, which together form a lock for the blocks. For an extended arch, holes may be made in the blocks and bars or bolts, *m*, *n*, inserted to bind the blocks more firmly together, as shown at C. The bevil portion, *c*, *d*, may be set either inwards, as at F, or outwards, as at E. In the case of the sill, D, the bevelled portion of the blocks will be set outwards, it being understood that the frame of the window is built in during construction to allow of the projections *e*, *f*, *g* being on both sides of it. To avoid any possible entrance of water through the joints of the sill, ribs and recesses, as at *o*, *k*, may be formed, but in the vertical direction, as shown at G. June 6, 1912.

PATENT SPECIFICATIONS PUBLISHED

AUGUST 8, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 16,532. July 18, 1911.—W. H. Scott, Gothic Works, Norwich. Electric lifts.

17,004. July 25, 1911.—William Smith, Fair View, Lower Gornal, near Dudley. Crushing and grinding mills.

17,223. July 27, 1911.—John Wilson, Auckland, New Zealand. Apparatus for use in building concrete structures.

18,091. Aug. 10, 1911.—Thos. C. Fawcett, Ltd., and J. W. Bottomley, both of Whitehouse Engineering Works, Hunslet Road, Leeds. Machine for dividing and loading clay and other substances or materials.

19,209. Aug. 1, 1911.—Daniel Atkinson, 1 High Lane, Ridgeway, near Sheffield. Safety clutch mechanism for elevator or lift apparatus.

20,679. Sept. 19, 1911.—Engelbert Prosig, Klein-Venedig, 7 Mahr-Schönberg, Austria. Manufacture of artificial slates and such like.

20,701. Sept. 19, 1911.—James Lee, 4 Martineau Road, Highbury, N. Houses, sheds, and like buildings.

20,877. Sept. 21, 1911.—J. C. Reuter, 52 Inkermann Street, Wolverhampton. Means for preventing the felonious opening of safe or strong-room doors.

21,503. Sept. 29, 1911.—Thomas Pittman, Homeland, New Road, Shepperton. Manufacture of varnish.

21,689. Oct. 2, 1911.—Karl Freund, 32 Goldsmith Road, Acton, and R. R. Kuhn, 27 Glasshouse Street, W. Means for fastening window sashes.

23,227. Oct. 21, 1911.—David Campbell, architect, The Hawthorns, Chorley New Road, Bolton. Movable water-excluding bar for casement windows, sashes and the like.

24,512. Nov. 4, 1911.—Date claimed under International Convention April 28, 1911. Edward Kersey, 950 Dakin Street, Chicago, Cook, Illinois. Flushing tanks.

24,677. Nov. 6, 1911.—W. H. Roughsedge, 64 Sparks Street, Ottawa. Construction of concrete buildings.

24,812. Nov. 7, 1911.—J. C. Edwards, Bryn, Howell, Llangollen. Manufacture of imitation stone blocks.

27,694. Dec. 9, 1911.—Edgar Holladay, 190 High Street, Exeter. Low-pressure hot-water heating apparatus.

28,888. Dec. 22, 1911.—G. C. Vernon-Inkpen, 40 Commercial Road, Portsmouth, architect, F.C.I.S. Concrete piles for foundations and similar purposes.

28,996. Dec. 23, 1911.—C. L. Wilson, Carlton Works, Armley, Leeds. Apparatus for the heating of water.

281. Jan. 3, 1912.—Solomon Barnes, 189 St. James Street, Montreal. Automatic moulding sand riddles.

702. Jan. 9, 1912.—Curt Bernhard, 41 Albersloherweg, and Wilhelm Leuer, 27 Bremerstr., Munster, Germany. Balusters.

1,802. Jan. 23, 1912.—L. W. Mulford, Narberth, Montgomery. Pavement-light, vault-light, and roof-light construction.

2,464. Jan. 30, 1912.—Samuel Spreckley, Ashen Road, Clare, Suffolk. Stoves for greenhouses, boilers or geysers for domestic and other purposes.

5,957. March 9, 1912.—Thomas Mason, Beaufort, Killarney. Window holders for sliding sashes.

6,028. March 11, 1912.—Date claimed under International Convention May 27, 1911. Matteo Tamburini, 310 Mill Street, Paterson, New Jersey, U.S. Combination locks.

6,967. March 21, 1911.—John Fothergill, Southbourne, Norton-on-Tees. Safety locking and latching devices for lift gates or doors.

7,891. April 1, 1912.—H. C. Ferron, 911 Prinsengracht, Amsterdam. Metallic roofing and the like.

9,506. April 22, 1912.—William Roper, 1220 Master Street, Philadelphia, Penns., U.S.A. Metal casements.

9,519. April 22, 1912.—A. G. Monro, Shamrock Hotel, Pall Mall, Bendigo, Victoria, Australia. Guard for closet seats.

11,580. May 15, 1912.—Date claimed under International Convention May 15, 1911. G. H. Inman, 630 North Twenty-Fourth Street, Camden, New Jersey, U.S. Safety devices for lifts.

MR. J. T. BLACKWELL, L.R.I.B.A., architect, Kettering, informs us that he has taken into partnership Mr. Charles Riddey, A.R.I.B.A., and that the practice will be carried on at his address, No. 53 High Street, Kettering, under the style of "Blackwell & Riddey."

THE Executive Council of the Amalgamated Society of Carpenters and Joiners announced on Saturday further advances of one halfpenny per hour at Bristol, Blackheath, Keighley, Kilmarnock, Loughborough, Montrose, Watford, Chepstow, Falkirk, Cambridge, and Goole. The membership of the society was returned at 74,683.

THE Health Committee of Glasgow Corporation last week considered a report dealing with the advisableness of establishing a hospital at Robroyston for consumption and smallpox patients. It was agreed to recommend that alternative offers be taken for constructing the building in ordinary construction and in composite construction. The statement showed a probable cost of £57,299 for ordinary construction, and £61,531 for composite construction. Accommodation would be provided for 210 patients meantime, but the plans admit of extension to accommodate 600 patients.

OTTAWA is the scene of great building activity, and the new private and Government buildings are requiring great weights of structural steel. Some seven or eight thousand tons are to be used in one departmental building, and there are many others to build during the next four or five years. Depending on its ultimate decision as to the water supply the city of Ottawa will want alternatively fifteen miles of steel piping or a series of water filtration plants. In Quebec, also, many important building trade developments are due within the next couple of years, and with the dock extension and railway terminal extension schemes, which are also approaching maturity, a largely increased demand for supplies of all and sundry kinds is assured. German firms are said to have profited from their policy of appointing local agents to sell their tools and pumps. United States makers of hardware are always at work by proxy of their own travellers and agents and their unending flow of catalogues.—*The Mercantile Guardian*.

GRIMSBY AND IMMINGHAM.

IN the Port of Grimsby and Immingham Annual, 1912, all the latest features in connection with the new docks and works at Immingham recently opened by H.M. the King are dealt with fully, and special attention is paid to the coal and fish trades of the port. As before, a large portion of the articles is translated into French and German. Over 4,000 copies of the last issue were circulated on the Continent alone, and shippers, traders and the Chambers of Commerce in the United Kingdom received it and commented favourably upon the work. From various parts of the world have come inquiries which show the extensive interest which has been created in mercantile centres. This is not surprising, inasmuch as alert business men everywhere are bound to appreciate the obvious advantages of economy, facility, direct communication with England's greatest trading centres, and absolutely untrammelled, continuous entrance and exit which the new port affords. It is not in the nature of commercial people to neglect such superior opportunities. As Mr. Alderman J. Sutcliffe, J.P., President of the Grimsby Chamber of Commerce, Vice-Chairman of the Humber Conservancy Board, &c., says in his Prefatory Note to the Annual, there is no doubt that, so far from having reached a zenith of prosperity, Grimsby and Immingham are but on the threshold of a vastly greater development, which will come only the faster from the unequalled advantages which the Great Central are now affording, and which the Company may be relied upon to continue to afford as the necessity or desirability arises. Fears have been expressed in some quarters that as the trade of Immingham grows, that of Grimsby will decline. These fears are wholly baseless, there being little doubt that the two ports will prove so mutually supporting that eventually the younger will be absorbed by the older, and the Immingham Dock will become only one of the many great docks existing at a far greater Great Grimsby. The signs of a vast manufacturing trade trending this way from the west, drawn by the unfailing magnets of coal and iron, are already portentous, and point to a future extension of commerce flowing in and out of Grimsby.

EXAMINATION FOR SMOKE INSPECTORS.

It has been urged upon the Council of the Royal Sanitary Institute that there is a need for some certificate of qualification for the post of smoke inspector, such as would indicate that they have a practical as well as a theoretical knowledge in those subjects of which it is necessary that they should be cognisant in order to satisfactorily carry out their duties. In order to meet this demand, and to afford an opportunity to inspectors in office and others of obtaining an evidence of qualification in the practical and administrative duties of this position, the Council have decided to institute a special examination and to award certificates. It is proposed to hold examinations in Manchester on April 18 and 19, and in London on May 2 and 3.

Syllabus of Subjects.

A knowledge of the laws, by-laws, and regulations affecting the emission or prevention of smoke, and methods of procedure in dealing with offenders.

A knowledge of the general principles underlying the production and transmission of heat; elementary chemistry of combustion.

Fuels: solid, liquid, gaseous; different kinds of coal in use; their attributes, the locality from whence obtained; special fuels.

Furnaces: the essentials of construction; various types in use, purposes for which they are used.

Chimneys: height, natural and artificial draught and its measurement; composition and temperature of escaping gases. Proportion of carbonic acid as an indication of furnace efficiency.

Stoking: principles and practice of stoking, mechanical stokers; other apparatus and appliances for improving combustion.

Smoke: nature and composition of; formation and predisposing causes; effect of various components of smoke on the atmosphere, vegetation, and buildings.

Smoke prevention in boiler and other furnaces, and in domestic fires; conditions of smokeless combustion, methods of measuring or estimating density and colour of smoke; smoke charts and instruments.

Other gases, dust, and effluvia produced by combustion; their reduction and prevention.

A general knowledge of the various industries in which furnaces are used, or from which products of combustion are given off.

The main outlines of the application of gas, oil, and electricity for the production of power in various industries.

Regulations.

1. Candidates must at the time of making their application produce satisfactory evidence of having had practical experience in connection with the working of furnaces.

2. Application for examination must be made on the proper form, and must be sent to the office of the Institute fourteen days before the date of the examination at which the candidate wishes to present himself.

3. The fee for the examination in Great Britain and Ireland is £3 3s. It must be paid to the secretary; 10s. 6d. on making the application, and the remainder at least one week before the day of examination.

4. Every candidate is required to furnish the Board of Examiners with satisfactory testimonials of recent date as to age and personal character; these should, if possible, be from a clergyman, medical man, or someone holding an official position.

5. The candidate must be able to write legibly, spell correctly, be able to make an outline sketch to scale, and read ordinary building plans, and must possess a fair knowledge of arithmetic: so that he may be able to prepare a report on any subject connected with his duties, creditable to himself and to the authority employing him.

6. The examination occupies a portion of two days. On the first day it consists of two written papers, two hours being allowed for each. The candidate may be required to make an inspection and write a report. On the second day the examination is *viva voce*, with one or more questions to be answered in writing, if required.

7. A certificate of competency, bearing the seal of the Institute, is granted to each successful candidate.

8. A certificate is not granted to any candidate under 21 years of age.

9. An unsuccessful candidate is allowed to present himself, at intervals of not less than three months, a second and third time for examination within two years of his first application on payment of half fees; but in every case the candidate must make application on the prescribed form previous to presenting himself for examination.

10. Any person having passed the examination and received the certificate for smoke inspector is, by virtue of having such certificate, upon proposal and election as associate of the Institute, called upon to pay only the reduced subscription of 10s. 6d. annually.

TRADE CONDITIONS IN WINNIPEG.

THE Imperial Trade Correspondent at Winnipeg (Mr. J. Appleton) reports to the Commercial Intelligence Department of the Board of Trade that extraordinary activity in building has increased the demand for supplies used in construction, a demand to which so many United States firms give special attention, with the result that their business has very largely increased, except in the case of terra cotta.

In the selection of interior fittings, builders' hardware, and the general equipment of buildings, the opinion of the architects employed usually prevails, and they determine the character of the purchases. It is of the utmost importance, therefore, says the *Board of Trade Journal*, that the firms engaged in the manufacture of building equipment of any kind should keep architects well informed as to the merits of the products for which a market is desired. In this respect the representatives of United States firms are particularly active. Supply firms catering for the wants of builders do not, as a rule, keep large stocks, but act as agents for the procuring of the supplies specified by architects. The fact of the proximity of the United States to Canada is often the deciding factor in procuring building supplies from there, because of greater certainty in getting delivery within a specified time.

As the population of the Western Canadian Provinces is rapidly increasing, it follows that trade opportunities will increase correspondingly.

Winnipeg is the chief trade centre for the provinces of Manitoba, Saskatchewan, and Alberta, and its trade has very largely increased during the past year, in consequence of the increasing population. That its trade will continue to increase is apparent from the fact that so much capital expenditure in the territory over which that spreads is already arranged for. In the case of the railway companies, appropriations already set aside for employment this year in the three prairie provinces named aggregate about £10,273,000, to be expended in constructing and equipping

new railways. Incident to this expenditure, local trade opportunities arise for the supply of building materials for the towns that spring up on the newly-built lines, and also the supply of the necessities for the new population. Local conditions determine the character of these equipments, and, so far, either Canadian or United States industry has successfully met them. The demands this year, however, will be very much greater than usual, because of the large general immigration, the purchasing power of the immigrants being increased by the large number of settlers with means coming from the United States.

The great factor in trade stimulation in the Canadian West this year will be, in the opinion of the Trade Correspondent, the unusually large capital expenditure in building and in railway construction. Although for some years it is probable that these expenditures will be large factors in the upbuilding of a very large and promising territory, it would not be reasonable to assume that in proportion to population so much money will, after a lapse of some years, be invested annually in the two enterprises referred to. Present conditions appear to warrant unusual expenditures, but they cannot be regarded as permanent factors in determining trade conditions, so much railway construction and so much structural building in new towns and cities being an abnormal condition. Following the extension of the railways into unsettled parts of the west, towns and villages will spring up, and as their inhabitants and those of the districts adjacent to them become settled, they will have other wants than those of shelter and implements of husbandry.

Attention is drawn to the practice of shipping agents in the United Kingdom marking packages for export with some "mark" by which the consignee is expected to identify them when they reach their destination. This practice has led to much confusion in Winnipeg. Consignees prefer to have their full names and addresses on each package, as this greatly facilitates handling.

THE REBUILDING OF SAN FRANCISCO.

DURING 1911 the rebuilding of that portion of the city which was destroyed by the fire of 1906 has been steadily going on, but according to the annual report of the British Consul many blocks yet remain unoccupied except by ruins.

The City and County Hospital and Courts of Justice have been completed at a cost of more than £416,600 and £208,300 respectively.

Progress has been made with the laying down of the auxiliary fire system. This may be completed in 1912. The estimated cost is £1,145,800. The salt water which is to be used in it will be taken from San Francisco Bay.

Other municipal works also under construction are: A new sewage system, to cost £833,300; a plant for disposing of the city refuse, costing £208,300, and schools of all grades, costing £1,166,600.

The following are under discussion at present, viz.:—

	To cost £
City Hall	937,500
City Opera House	208,300
California State Building	208,300
Public Hall or Auditorium	1,250,000
Public Library	104,100
Art Institute	104,100

The roads as a rule are well made and maintained. In many places, especially in the vicinity of towns, they are surfaced with crude oil. In the remoter districts, alongside the main roads, water tanks have been erected from which in summer time the roads are watered twice a day.

Considerable progress has been made in the preliminaries connected with the Panama-Pacific International Exhibition of 1915. The site has been fixed upon, and the first contract for the preparation of the ground has already been awarded. A sum of about £4,166,600 has been privately subscribed and voted by the State of California and the city of San Francisco towards the expenses of the exhibition.

It is estimated that on September 30, 1910, there were 540 industrial establishments in San Francisco, employing 24,000 hands, with an output valued at £24,240,000 per annum. The motive power used is oil or water-generated electricity. At present 446,000 horse-power is developed from 1,070 water wheels, and it is estimated that 9,000,000 horse-power can still be developed from the water-power available in the State of California.

No serious strikes took place during the year.

The population of San Francisco, according to the 1910 census, is 416,912.

VARIETIES.

THE Southport Council propose to erect a shelter near the South Marine Gardens to accommodate 3,000 people.

THE Earl's Court Exhibition authorities, in conjunction with the District Railway Company, propose to erect an immense hall in their grounds—the biggest in the country. The width of the floor space will be 300 feet, the length 500 feet, the total floor area, including the galleries, just under 400,000 square feet.

THE Mersey Docks and Harbour Board have approved an expenditure of over £11,000 for dock repairs and improvements. The items include £1,400 for repairs to a shed roof damaged by fire at the Alexandra Branch Dock, £1,230 for the relaying of lines and repaving of the road near the Alfred Swing Bridge, and £8,630 for the reconstruction of the dock wall and erection of a shed at the Salthouse Dock.

At a sitting of Clydebank Dean of Guild Court on Monday, Mr. Leslie Kirk, builder, Clydebank, presented plans for the laying out of new streets at Dalmuir Hill. It is intended that some 60 villas, detached and semi-detached, be erected on the ground to be laid out. The application was passed.

THE Education Committee of the Sunderland Corporation recommend the Council to proceed simultaneously with the erection of a day training college for teachers, and the addition of buildings to the Bede Collegiate School on the existing site at Cowen Terrace, making a total accommodation for 800 pupils, in accordance with plans submitted by Mr. G. T. Brown, architect.

THE Scarborough Corporation have decided to apply to the Local Government Board for a loan of £2,600 for an open-air swimming bath in front of Belvedere Gardens on the south side, and for a loan of £2,250 for the protection of the face of the cliff from the Children's Corner to Black Rock. It was also agreed to extend the promenade in the North Bay at a cost of £600, and to renovate the boat house at the Mere, and provide new boats at a cost of £400.

MANUFACTURERS and others contemplating the establishment of new works would be well advised to write to Mr. T. H. Rendell, the general manager of the Barry Railway Company, Barry Docks, who will be pleased to supply full particulars of the sites the company have available in the South Wales district, which offers exceptional facilities for economy in working, cost, and cheap and expeditious transit.

THE Copartnership Tenants' Society, through its educational department, has just awarded the scholarships and prizes offered to the employees who attended local classes and Polytechnics under the scheme drawn up a year ago. The total number of students taking technical classes at Hampstead, Letchworth, and Ealing was 173. The two £15 scholarships which are to be used for a Continental trip to study housing and town-planning have been awarded to Mr. George B. Cockerill, who is a prime cost clerk engaged at Hampstead, and Mr. Charles W. Sreeves, a foreman plasterer at the same place. The tour arranged for these students provides for their leaving London on August 30, and they will visit Cologne, Essen, Frankfurt, Bingen, Wiesbaden, Coblenz, Liege, and Brussels. The total number of applications for scholarships was 79, and in addition to the two scholarships eight consolation prizes have been awarded.

BILLIARD players and billiard enthusiasts will doubtless be keenly interested to hear that an opportunity of learning the secrets of George Gray's astounding play is now offered to them for nothing. In "Gray on Billiards" (published at 1s.) he clearly gives directions whereby if the enthusiast has the patience to practise and the necessary knack, he may perhaps become a rival. It's simply a matter of knowing how—and Gray explains that—and practice, plus practice, plus practice. Messrs. E. J. Riley, Ltd., of Accrington—the celebrated billiard table makers, upon one of whose tables Gray made all his records in this country—have secured the whole of the edition and will send a gratuitous copy on receipt of two penny stamps to cover cost of packing and postage. As the issue cannot be reprinted, application should be made at once.

TRADE NOTES.

UNDER the direction of Mr. H. Foxall, L.R.I.B.A., architect, Carlisle, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to St. Cuthbert's Roman Catholic School, Union Street, Carlisle.

THE Architect and Contract Reporter.

FRIDAY, AUGUST 23, 1912.

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AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

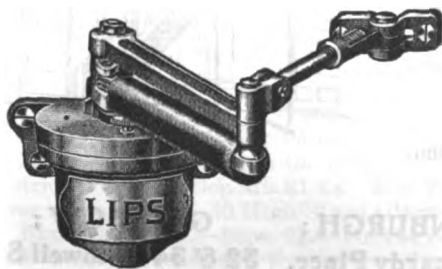
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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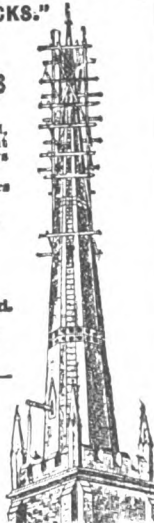
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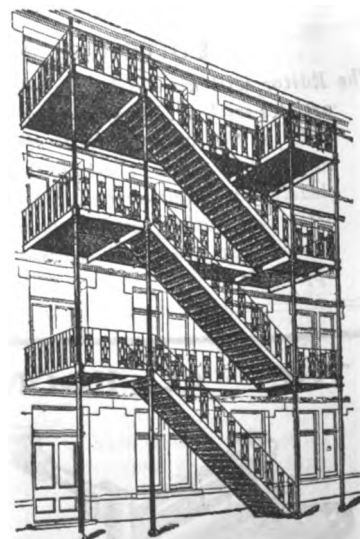
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CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GOOLE.—Sept. 1.—The Council invite designs for municipal offices from fully-qualified professional architects. Two premiums of £30 and £15 are offered. Printed instructions containing full particulars will be forwarded upon receipt of a stamped addressed foolscap envelope, accompanied by a deposit of £2 2s., which will only be returned upon receipt of a design. The designs must be sent in not later than Monday, September 1. Mr. Robert Tyson, clerk to the Council, Council Offices, Goole.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

CONTRACTS OPEN.

BARNET.—Sept. 3.—For the erection of twenty-two cottages in Totteridge Lane, within the urban district, for the Urban District Council. Deposit £1 1s. Mr. W. F. Wilkins, surveyor to the Council, 40 High Street, Barnet.

BEXHILL-ON-SEA.—Sept. 21.—For the reinstatement of the wall to the gardens, and storm-water duct—the whole to be in concrete, supported by six mild steel stanchions—for the Proprietors of the Kursaal. Deposit 10s. Mr. L. Burn,

A.M.I.M.E., consulting engineer, 6 Holborn Viaduct, London, E.C.

BIRMINGHAM.—Aug. 29.—For the construction of subways at the Birmingham telegraph stores. Deposit £1 1s. Mr. J. Tosh, H.M. Office of Works, Pinfold Street, Birmingham, and H.M. Office of Works, Storey's Gate, London, S.W.

BLANDFORD.—Aug. 31.—For erection of a cottage on holding No. 12 Winterborne Zelston, near Blandford, in the occupation of Mr. T. Fiander, for the Dorset County Council. The County Land Agent, County Offices, Dorchester.

BRADFORD.—Aug. 31.—For removing existing and erecting new principal staircases to the Town Hall, for the Corporation. The City Architect, Town Hall, Bradford.

BOLTON-ON-DEARNE.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Bolton-on-Dearne new school—viz., builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Mexborough. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

BOTUSFLEMING.—Aug. 28.—For reroofing and general repairs to Hatt House, Botusfleming, Cornwall, for Mr. H. S. Symons. Deposit £2 2s. Mr. H. A. Hosking, architect, Landrake, St. Germans.

BRENTWOOD.—Sept. 2.—For the enlargement of the Brentwood post office. The Postmaster at Brentwood Post Office and H.M. Office of Works, Storey's Gate, S.W.

BUILTH WELLS.—Aug. 28.—For building a fire station, &c. Mr. T. Smith, M.S.A., surveyor, Market Hall Buildings, Builth Wells.

CHELMSFORD.—Aug. 28.—For extension of fire engine station in Market Road. Mr. W. Smith, town clerk, 16 London Road, Chelmsford.

CONGLETON.—Aug. 31.—For alterations at St. Peter's, St. James's, and St. Stephen's schools, for the Congleton Church of England Schools Joint Committee. Deposit £1 1s. Mr. J. Moir, Brereton Hall, Sandbach.

CONSETT.—Aug. 27.—For the mason, joiner, plumber and plasterer work in connection with proposed alterations, refitting, &c., at new Town Hall, Consett, Durham. Mr. J. J. Eltringham, L.R.I.B.A., architect and surveyor, Derwent Street, Blackhill.

COTTINGHAM.—Sept. 2.—For erection of a parish hall, for the Urban District Council. Mr. A. C. Blackmore, architect, 3 Alfred Gelder Street, Hull.

CUDHAM.—Sept. 21.—For the erection of a Council School to accommodate 120 scholars, at Cudham, Biggin Hill, for the Kent Education Committee. Send application and £1 1s. deposit by Sept. 4 to Mr. Fras. W. Crook, Secretary, Caxton House, Westminster, S.W. (See advertisement.)

DARTFORD.—Sept. 2.—For the execution of certain works at the workhouse, West Hill. Messrs. Tait & Hobbs, architects, Lowfield Street, Dartford.

EAST BARNET.—Aug. 29.—For alterations and additions at the Brunswick Park County Council school, East Barnet, for the Hertfordshire County Council. Deposit £2 2s. Mr. U. A. Smith, county surveyor, Hatfield.

EBBW VALE (MON.).—Sept. 9.—For erection of proposed 100 or more houses, in three classes, near steelworks, Ebbw Vale, Mon., for the Gwalia Building Club. Messrs. W. Harris & Son, architects and surveyors, Bank Chambers, Bargoed, or Mr. W. Williams, accountant, Station Chambers, Ebbw Vale.

GLOUCESTER.—Aug. 31.—For erection of proposed infirmary in Great Western Road, for the Guardians. Send names by Aug. 31 to Mr. W. B. Wood, A.R.I.B.A., architect, 12 Queen Street, Gloucester.

GOLCAR.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works at Crow Lane Council school, Golcar—viz., additional classroom (builder, joiner, slater, plumber, plasterer, and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

HARROW.—Aug. 30.—For the various works required in additions to ham and bacon factory at Harrow, for Messrs. John Adamson & Co., Ltd., Harrow and London. Send names and £1 1s. deposit at once to Mr. M. Johnstone, architect and engineer, 22 Lowther Street, Carlisle.

HYDE.—Aug. 31.—For erection of a public hall, police courts, offices, and other works in Corporation Street, Water Street, and Greenfield Street, for the Corporation. Deposit £3 3s. Mr. J. Diggle, A.M.I.C.E., borough surveyor, Town Hall, Hyde, Cheshire.

IRELAND.—For the erection of new National Schools at Carnelscourt, County Dublin, for the Very Reverend Canon O'Hea, P.P. (Messrs. Orpen & Dickinson, architects, 13 South Frederick Street, Dublin.) Send £1 1s. deposit to Messrs. Beckett & Medcalf, 6 Clare Street, Dublin.

IRELAND.—Aug. 26.—For building new stables at their depot in East Hanover Street, for the Dublin Paving Committee. The City Architect, Municipal Buildings, Cork Hill, Dublin. Send £2 deposit to the City Treasurer, Municipal Buildings, Dublin.

IRELAND.—Sept. 2.—For building a church at Larne, for the Committee of Gardenmore Presbyterian Church (Messrs. Hobart & Heron, architects, Scottish Provident Buildings, Belfast.) Deposit £1 1s. Messrs. Mc'Carthy & Brookes, surveyors, Scottish Provident Buildings, Belfast.

IRELAND.—Sept. 7.—For improvements and repairs to forty-seven houses and for rebuilding three others in Bandon, for Mr. T. W. Wright. Messrs. Chillingworth & Levie, civil engineers and architects, 11 South Mall, Cork.

IRELAND.—Sept. 9.—For the erection of New Dublin Metropolitan Police Station in Great Brunswick Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Sept. 9.—For erecting and completing a Coast-guard Station at mouth of the Boyne, County Louth. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Sept. 18.—For the construction of Government Offices in Upper Merrion Street, Dublin. Deposit £5 5s. The Secretary, Office of Public Works, Upper Merrion Street, Dublin.

JARROW.—Sept. 3.—For the construction of a public sanitary convenience to be erected at Nos. 72 and 74 Nixon Street, for the Corporation. Mr. J. S. Weir, A.M.I.C.E., borough engineer, Town Hall, Jarrow.

KEIGHLEY.—Aug. 27.—For erection of a cubicle isolation pavilion for twelve beds at the infectious diseases hospital, Morton Banks, for the Keighley and Bingley Joint Hospital Board. Messrs. Moore & Crabtree, architects, York Chambers, Keighley.

LEEDS.—Sept. 4.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Leeds new telephone exchange. Deposit £1 1s. The Postmaster, Leeds Post Office.

LEICESTER.—Aug. 31.—For the supply and erection of steel roof trusses, lattice girders, and columns required for an extension of the main car dépôt, Abbey Park Road, for the Corporation. Deposit £1. The Borough Surveyor's Office, Town Hall, Leicester.

LINTHWAITE.—Aug. 29.—For the masons', joiners', plumbers', plasterers', painters', heating, concretors', and electric lighting works required in erection of additions and alterations to the Liberal Club. Messrs. Stocks & Sykes, architects, St. Peter's Street, Huddersfield.

LONDON.—Sept. 2.—For the execution of certain alterations (chiefly in joinery and fittings) to dormitories, &c., at their infirmary, Cambridge Road, E., for the Bethnal Green Board of Guardians. Mr. D. Thomas, clerk, Bishop's Road, Victoria Park, London, N.E.

LONDON.—Sept. 11.—For proposed additional room and work in connection therewith at the offices, 45 Upper North Street, Poplar, E., for the Poplar Board of Guardians. Send applications and £2 2s. deposit by August 26 to Messrs. J. & W. Clarkson, architects, 136 High Street, Poplar, E.

LONDON.—Sept. 12.—For erection of the buildings required for an extension of their electricity works at Millfields Road, Clapton, N.E., on the river Lea, for the Hackney Borough Council. Messrs. Gordon & Gunton, architects, Finsbury House, Blomfield Street, E.C. Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney.

LOSTWITHIEL.—Aug. 30.—For erection of an addition to the Working Men's Institute. Mr. R. Mason, jun., secretary, Lostwithiel.

MACCLESFIELD.—Sept. 2.—For alterations to the receiving wards at the workhouse. Messrs. Whittaker & Bradburn, architects, King Edward Street, Macclesfield.

MANCHESTER.—Aug. 27.—For alterations and additions to Manchester County Court. Deposit £1 1s. The Registrar at the Manchester County Court and H.M. Office of Works, &c., Storey's Gate, S.W.

MANCHESTER.—Aug. 29.—For (1) the erection of a nurses' home; and (2) additions to the hospital matron's office, sisters' dining-room, and maids' dining-room, at the Withington Workhouse. Deposit £1 1s. Mr. Frederick H. Overmann, Q.S.A., 48 King Street, Manchester.

MINEHEAD.—Sept. 1.—For the erection of convenience and ladies' cloakroom on the sea front, Minehead, Somerset, for the Urban District Council. Deposit £2 2s. Mr. L. C. Webber-Incedon, clerk, 3 Banks Street, Minehead, Somerset.

NEW MALDEN.—Sept. 2.—For the proposed extension to the mortuary at the rear of the municipal buildings, for the Maldens and Coombe Urban District Council. Deposit £2 2s. Mr. R. H. Jeffes, A.M.I.C.E., Municipal Offices, New Malden.

NEWPORT (MON.).—Aug. 27.—For erection of electric car paint shop on site at Corporation Road, for the Corporation. Mr. C. F. Ward, A.R.I.B.A., borough architect, Town Hall. Send £1 1s. deposit to the Borough Treasurer, Town Hall.

NORTHWICH.—Aug. 29.—For erection of public baths and wash-houses, for the Urban District Council. Deposit £2 2s. Mr. J. A. Cowley, clerk, Council Offices, Northwich.

PEMBERTON.—Aug. 31.—For building a club. The Central Working Men's Club, Belle Vue Street, Pemberton, Lancs.

PONTEFRAC.—For alterations to Messrs. Barclay & Co.'s Bank, Market Place. Messrs. Garside & Pennington, architects, Pontefract and Castleford.

PONTYPRIDD.—Sept. 2.—For erection of proposed new offices in Courthouse Street, Pontypridd, for the Guardians. Deposit £3 3s. Messrs. A. O. Evans, Williams & Evans, architects, Court Chambers, Pontypridd.

PORTLAND.—Aug. 29.—For erection of a brick pumping station and foreman's cottage near the Friar Waddon Road, Upwey, together with the provision, fixing, and setting to work of two borehole pumps and 136 h.p. Crossley gas engine with suction gas plant complete, for the Urban District Council. Deposit £3. Mr. R. S. Henshaw, waterworks engineer, Council Offices, Portland.

PORTSMOUTH.—Aug. 26.—For erection of a store for school supplies in the infants' playground of the Arundel Street Council School (Crasswell Street entrance), for the Education Committee. Mr. A. H. Bone, surveyor, Cambridge Junction, Portsmouth.

PORTSMOUTH.—Sept. 11.—For the following works, for the Guardians—viz.: (a) a boiler house, coal store, and heater room, on the Hennebique system; also (b) a chimney shaft with annular water tank, on the Monoshaf system of construction. Tenders will be considered for the boiler-house buildings and chimney shaft separately, or for both conjointly. Deposit £10. Mr. J. Buley, consulting engineer, Suffolk House, Laurence Pountney Hill, London, E.C.; or to the Clerk to the Guardians, 1 St. Michael's Road, Portsmouth.

PRESCOT.—Sept. 11.—For the following works, for the Guardians—viz.: (a) Erection and completion of a house in Warrington Road, Whiston; (b) erection and completion of a strong room at the union offices, Whiston (deposit £1 for a and b); (c) cleaning and painting the exterior and interior of six infirmary blocks at the workhouse, Whiston (deposit £1). Mr. W. Ellis, architect, 9 Hardshaw Street, St. Helens.

ROTHERHAM.—Aug. 31.—For erection of an extra unit at the destructor works in Rawmarsh Road, for the Corporation. The Borough Engineer's Office, Town Hall, Rotherham.

SCOTLAND.—Aug. 28.—For mason, carpenter, slater, plaster, plumber, glazier, and painter, and iron works of additions to the Alford village public school, for the Alford School Board. Mr. J. Reid, clerk, Brainley, Alford, Aberdeen, and Messrs. D. & J. R. M'Millan, architects, 105 Crown Street, Aberdeen.

SCOTLAND.—Aug. 29.—For the following works required in connection with erection of baths and wash-houses at Garngad, Glasgow, for the Corporation—viz.: (1) Excavator, brick and mason works; (2) wright, steel roofing and glazier works; (3) slater work; (4) plumber and engineering works; and (5) painter work. The Office of Public Works, 64 Cochrane Street, Glasgow.

SCOTLAND.—Aug. 30.—For mason and brickwork, smith and founder, joiner, glazier, plumber, slater and plaster work for proposed extension of electric generating station, Victoria Road, Kirkcaldy, for the Town Council. The Burgh Surveyor's office, Kirkcaldy.

SCOTLAND.—Sept. 2.—For works in new police station, Gorebridge, for the Midlothian County Council. Mr. R. M. Cameron, architect, 53 Great King Street, Edinburgh.

SCOTLAND.—Sept. 2.—For executing the mason, bricklayer, and steel works of extension of Fish Market along Albert Quay. Mr. W. Dyack, M.Inst.C.E., burgh surveyor, Town House, Aberdeen.

SOUTHAMPTON.—Sept. 3.—For the rebuilding of 7, 8 and 9 and the reinstatement of 11 Bridge Street, for Messrs. E. Hart & Co. Charge 5s. Mr. W. B. Hill, architect and surveyor, 93 Above Bar, Southampton.

STREETLY.—Aug. 30.—For erection and completion of a Council School, to accommodate 126 children, at Streetly (near Sutton Coldfield), for the Staffordshire Education Committee. Send applications and £1 ls. deposit by Aug. 30 to Mr. G. Balfour, director of education, County Education Offices, Stafford.

SULBY.—Sept. 10.—For erection of a new chapel, for the Trustees of Sulby Wesleyan Chapel. Mr. J. E. Teare, Athol Street, Douglas.

TIPTON.—Aug. 31.—For erection of engine and boiler house, &c., at the Tipton Gasworks, on foundations prepared by the Council. Mr. S. O. Stephenson, engineer, Gasworks, Tipton.

THORNTON HEATH.—Sept. 3.—For builders' work in connection with conversion of two lifts at the infirmary, Mayday Road, Thornton Heath, Surrey, for the Guardians of Croydon Union. Deposit £3 3s. Mr. H. Berney, architect, 104 George Street, Croydon.

TRURO.—Aug. 29.—For the erection of four residences at The Avenue, for Mr. W. Beard. Mr. Leonard Winn, architect and surveyor, 27 Boscawen Street, Truro, and the Free Library Chambers, Redruth.

WALES.—Aug. 28.—For the following works, for the Glamorgan County Council—viz.: (1) New school at Bettws, near Bridgend; (2) new school at Blaengwrach, near Neath; (3) new school at Pontllw, near Pontardulais (removal of temporary building from Gorseinon and foundations for same); (4) new mixed school at Trebanos, near Pontardawe; (5) Pontardulais infant school, new heating chamber; (6) Gowerton girls' and infants' school, alterations to offices. The Glamorgan County Council Offices, Westgate Street, Cardiff.

WALES.—Aug. 31.—For erection of a cottage at Landimore Farm, Cheriton, Gower, for the Glamorgan County Council. Messrs. Hartland, Isaac, Watkins & Lewis, 7 Rutland Street, Swansea.

WALES.—Aug. 31.—For erection of exchange buildings at the corner of Adelaide Street and Cambrian Place, Swansea, and for other works in connection therewith. Send names and addresses and £3 3s. deposit by Aug. 31 to Mr. Charles T. Ruthen, architect, Bank Chambers, Heathfield Street, Swansea.

WALES.—Aug. 31.—For erection of a pair of semi-detached houses at Abercanaid, for Messrs. T. & J. Williams. Mr. T. E. Rees, architect, Bank Chambers, Merthyr Tydfil.

WALES.—Aug. 31.—For additions and alterations to Holly Cottage, Ochry-Fool, Dyserth. Mr. J. Powell Jones, 33 High Street, Denbigh.

WALES.—Aug. 31.—For repairs and alterations to the Bethania C.M. schoolroom and vestry, Ruthin. Mr. F. A. Roberts, M.S.A., architect, Earl Chambers, Mold.

WALES.—Aug. 31.—For building new stores at Llandilo, for the Farmers' Co-operative Society, Ltd. Messrs. G. Morgan & Son, architects, 24 King Street, Carmarthen.

WALES.—Sept. 3.—For erection of ten houses in blocks I and J and eighteen houses in blocks O, P, and Q at Park View, Tredegar, for the Cwmrhos Building Club. Messrs. Wm. Harris & Son, architects and surveyors, Bank Chambers, Bargoed, or the Bush Hotel, Tredegar.

WALES.—Sept. 3.—For erection of girls' school and domestic subjects blocks at Troedyrhiw, for the Merthyr Tydfil Education Committee. The Borough Architect, Town Hall, Merthyr Tydfil.

WANSTEAD.—Sept. 12.—For erection of workshops on a site adjoining the receiving homes, Aldersbrook Road. Send applications and £1 deposit by Aug. 24 to Mr. William Jacques, A.R.I.B.A., architect, 2 Fen Court, Fenchurch Street, E.C.

WENDRON.—Aug. 29.—For erection of a cloakroom and porch for the Wendron Three Cross Schools. Mr. B. J. Treloar, Crahan, Wendron, Cornwall.

WINWICK.—Sept. 31.—For the erection of a boys' block at the Lancashire County Asylum, Winwick, Warrington. Send applications and £1 ls. deposit by August 31 to Mr. Thomas Chadwick, architect, 16 Princess Street, Manchester.

WORTHING.—Sept. 2.—For the taking down, widening, and reconstruction of a portion of the sea pier at Worthing, Sussex, including the provision and erection of cast-iron piles, steel girders, beams, bracing, concrete floor, and other works. Deposit £5. Messrs. James Mansergh & Sons, engineers, 5 Victoria Street, Westminster.

TENDERS.

ASHDOWN FOREST (SUSSEX).

For the erection of new house, for the Countess of Norbury. Mr. F. W. FOSTER, architect, 52 Seymour Street, W.

Simpson & Son	£19,891	0	0
H. & E. Waters	19,186	0	0
Longley & Co.	17,948	0	0
Perry & Co.	17,617	0	0
Holland & Hannen	17,222	0	0
Carmichael	17,135	0	0

BARNSELEY.

For the several trades (except plumbers) required in building new waterworks offices, &c., in Doncaster Road. Mr. J. H. TAYLOR, M.Inst.C.E., borough surveyor, Barnsley. POTTER, Barnsley (accepted) £562 0 0

BECKENHAM.

For the erection of caretaker's lodge, public conveniences, &c., in Kelsey Park. Mr. J. A. ANGELL, surveyor, Beckenham.

Lodge.

H. & G. Taylor	£819	0	0
Feddle	773	0	0
Overall	679	0	0
Jones & Andrews	670	0	0
ELLIMAN (accepted)	589	0	0

Conveniences.

Overall	£151	0	0
Elliman	150	0	0
Peddle	149	0	0
H. & G. Taylor	119	0	0
JONES & ANDREWS (accepted)	119	0	0

For supply and delivery of wrought-iron railings and gates required for Kelsey Park grounds. Mr. J. A. ANGELL, surveyor, Beckenham.

Rubery Owen & Co.	£1,913	6	10
Priest & Son	1,435	8	2
Cashmore & Co.	1,425	6	10
Main & Co.	1,371	3	4
Miller & Sons	1,179	11	4
Hill & Smith	1,163	12	0
Bain & Co.	1,118	3	6
Rayboulds, Ltd.	1,102	16	3
J. Elwell, Ltd.	1,099	5	6
Mullings & Co.	1,084	10	9
HAYWARD & SONS, Wolverhampton (accepted)	1,074	0	0

DEAL.

For the enlargement of their schools in North Wall Road, for the Education Authority. Mr. C. L. CROWTHER, architect, Deal.

Howland	£1,185	0	0
Bowles	1,015	0	0
Trevers	997	0	0
Lewis & Son	959	0	0
Turner & Watts	954	0	0
Browning	948	0	0
Howard & Paramor	929	0	0
Cottew	920	0	0
Denne & Son	916	0	0
T. T. DENNE, Walmer (accepted)	910	0	0

DEVIZES.

For erection of a mortuary at the workhouse.

Rendell & Sons	£177	10	0
Ash	176	0	0
Offer	173	0	0
CHIVERS & SONS, Devizes (accepted)	168	0	0

LEICESTER.

For erection of house, Letchworth Road, Weston Park. Mr. H. BLAND, surveyor, Leicester.

Bowles & Son	£689	0	0
Bradford	687	0	0
Haskard, Rudkin & Best	675	0	0
Richardson	654	0	0
Cole & Sons	651	0	0
Phipps	637	0	0
POTTER, Blaby (accepted)	615	0	0

For erection of a house in Letchworth Road, Westowe Park. Mr. H. BLAND, architect, Leicester.

Lea	£920	0	0
Bowles & Son	821	0	0
Phipps	752	0	0
Cole & Sons	739	0	0
Richardson	734	18	0
POTTER, Blaby (accepted)	730	0	0

FOLKESTONE.

For erection of a house, lodge, stables, &c., on the Acrise Estate, near Folkestone. Mr. H. F. MENCE, architect, St. Albans.

Kirk & Randall	£5,643	0	0
Wallis & Sons	4,984	0	0
Gosby	4,830	5	0
Jenner	4,760	0	0
Redhouse & Son	4,755	0	0
Marx	4,660	0	0
Barton & Co.	4,649	0	0
Castle & Son	4,638	0	0
Scott Bros.	4,600	0	0
Kemp & Co.	4,589	0	0
Lowe & Co.	4,587	0	0
Webster	4,587	0	0
Brightman & Son	4,553	0	0
Vant	4,498	0	0
Moody	4,497	0	0
Barker & Sons	4,497	0	0
Hayward & Paramor	4,449	0	0
W. E. Blake, Ltd.	4,420	0	0
Miskin & Sons	4,253	0	0
Watts & Co., Finchley (accepted)	4,020	0	0

MARYTAVY.

For the construction of works of water supply for the village of Marytavy, Devon, for the Rural District Council.

Shaddock	£2,310	2	3
Lester	2,208	8	0
Terrell	2,074	18	0
Fothergill Bros.	1,889	4	11
Furse & Sons	1,837	6	5
Laird & Co.	1,768	3	9
Petherick	1,762	0	9
Ellis & Sons	1,727	8	0
Doidge	1,672	15	0
Duke	1,666	0	6
DONEY, Horrabridge (accepted)	1,658	14	6

STAMFORD.

For erection and completion of a public swimming bath in the George Paddock. Mr. F. R. RYMAN, A.M.I.C.E., engineer, Stamford.

Roberts Bros.	£1,050	0	0
Hinson & Co.	985	0	0
Rouse	974	0	0
Peasgood	950	0	0
Howes, Stamford (accepted)	820	0	0
Ireson	818	0	0

All of Stamford.

WHITTINGTON.

For the construction of sedimentation tanks, filters, and other works at the sewage outfall site, in connection with the sewerage of Kinver, for the Seisdon Rural District Council. Mr. W. FIDDIAN, civil engineer, Stourbridge.

Currall, Lewis & Martin	£8,839	1	4
Vale & Sons	7,995	15	0
Lowe & Sons	7,740	0	0
Thompson & Farley	7,593	17	4
Boswell	7,407	17	1
Martin & Element	6,896	12	10
Guest & Sons	6,740	11	6
Hill & Co.	6,453	6	10
Holloway	6,288	10	8
T. J. MASON, Stourbridge (accepted)	6,090	15	10

WILMINGTON.

For the supplying and laying of about six miles of stone-ware pipes, together with manhole and appurtenant works, at Wilmington, Kent, for the Dartford Rural District Council. Mr. R. BROWN, A.M.I.C.E., engineer, 21 Old Queen Street, Westminster.

Muirhead & Co.	£10,337	0	0
Morecroft	8,261	0	0
Price	8,153	0	0
Middleton & Cooper	7,206	0	0
Milton Bros.	6,934	0	0
Blaker	6,408	0	0
Hardy & Co.	6,300	0	0
Ellingham	6,255	0	0
Farrow	6,016	0	0
T. Wood & Sons, Swanley Junction (provisionally accepted)	5,674	0	0

COMPETITION NEWS.

DARTFORD.—The Urban District Council are intending to invite competitive designs for a public hall and free library. It has been resolved to award premiums of £75, £50, and £25. The public hall is to seat 1,000 persons, the cost not to exceed £8,000, and £5,000 is to be expended on the library.

PONTEFRACT.—The Town Council last week adopted a scheme for the provision of new public baths. It was finally resolved by fourteen votes to four to accept the plans and estimates, with the provisional tenders, of Mr. A. Nunweek, of Sheffield, whose plans had been selected by the assessor, Mr. Brearley, of Leeds, as the most suitable amongst eighteen sets entered for competition ten months ago. The total cost, allowing £238 for contingencies, is estimated at £6,200.

WEST HARTLEPOOL.—The Town Council have decided to invite competitive plans for a new school.

FIRE LOSSES IN AMERICAN CITIES.

THE following is from a report by H.M. Consul-General at Boston on the trade of that district in 1911:—There seems to be a distinct awakening in recent years to the fact that fire losses in American cities are far higher than they should be. It has been shown that while the *per capita* fire losses of six European countries was 33 cents (1s. 4½d.), that of the United States was nearly 3dols. (12s.). Perhaps the greatest cause of this excessive fire loss is the prevailing custom of building the suburbs of most American cities in the cheapest and flimsiest style of wooden frame construction, covered with tar paper and wooden shingles, which are veritable bonfires when once ignited. Another reason, according to the secretary of the National Fire Protection Association, who spoke recently in Boston, is the poor quality of fire hose supplied by certain manufacturers. He stated that the quality had materially deteriorated during the past ten or twenty years, and remarked that there was no excuse for making such inferior quality. Strange though it may seem, it is stated on good authority that many fires are started by the combustion of "asbestos" packing for furnace pipes, &c. This material is, of course, spurious, being made of coarse hair with a dash of asbestos liquid to give it the appearance of the genuine article. Again, many of the so-called fireproof city buildings are fireproof as regards the shell of the building only, but since the interior is inflammable they become absolute furnaces when a fire is started.

TRADE NOTES.

THE Crompton Road schools, Macclesfield, are being supplied with Shorland's warm air ventilating patent Manchester grates and patent exhaust roof ventilators by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

ST. MARY'S CHURCH, Oatlands Park, Surrey, will shortly possess a new ring of eight bells (tenor 12 cwt.). The bells in question are those which were used for the "Festival of Empire," Crystal Palace, and these were booked by the church authorities subject to their ability to raise the necessary funds. The work is to be carried out by Messrs. John Warner & Sons, of "The Spitalfields Foundry," London.

THE Dundee Corporation Electricity Committee recommend an immediate expenditure of £49,000 on extensions.

THE Newton Urban Council have under consideration a scheme for the erection of swimming baths at a cost of £2,800.

THE Aberdeen Town Council on Monday adopted a recommendation of their Water Committee that the water reservoirs at Mannofield and Cattofield should be covered. The cost is estimated at £25,385.

THE Government of the Union of South Africa are spending £4,000,000 for railway works, £450,000 for rolling stock; also £600,000 on public works and buildings and £370,000 on telegraphs and telephones.

THE new road from the tram terminus at Southchurch, Southend-on-Sea, to Thorpe Bay is shortly to be commenced. The roadway will be 100 feet in width and about three miles in length.

THE University of Toronto, Canada, will erect a new building for a gymnasium, dining hall, reading and billiard rooms, &c., at an estimated cost of \$1,150,000 (about £236,000).

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE.

Clatterbridge.—Workhouse extension (£3,000).

Hyde.—Public Hall, Police Courts, Offices, &c., in Corporation, Water and Greenfield Streets. Mr. J. Diggle, A.M.I.C.E., borough surveyor.

Macclesfield.—Workhouse: alterations to receiving wards. Messrs. Whittaker & Bradburn, architects.

CORNWALL.

Crantock.—Houses for Miss Stephens.

Fraddon.—Houses for Mr. J. Bullock.

Perranporth.—Royal Cornwall Infirmary: female convalescents' home (£6,500).

CUMBERLAND.

Threlkeld.—Church Schools.

DEVON.

Newton Abbot.—Public Baths (£2,800).

G.W.R. Station.

DORSET.

Lyne Regis.—Eight Council cottages, Lower Early Mead Field.

Swanage.—Dairy, stables, &c. Messrs. Parsons & Hayter, architects.

House, Victoria Avenue and Northbrook Road, for Mr. F. Smith.

Four houses, Ancaster Road, for Mr. J. S. Date.

School. Messrs. Hart & Waterhouse (of London), architects.

DURHAM.

Craghead.—Twenty houses Mr. J. W. Rounthwaite, A.R.I.B.A. (of Newcastle-on-Tyne), architect.

GLOUCESTERSHIRE.

Cheltenham.—Workhouse Infirmary extensions (£800).

HEREFORDSHIRE.

Colwall.—Six Council cottages.

Cottage, Camp End, for Mrs. Buck.

Hereford.—Art School, Castle Green: alterations.

ISLE OF MAN.

Sulby.—Wesleyan Chapel. Mr. J. E. Teare (of Douglas), architect.

KENT.

Ashford.—Technical Institute, Elwick Road (£6,500).

Borough Green and Wrotham.—Council School improvements (£11,400).

Dartford.—Grammar School extension.

Gravesend.—Hospital extension. Mr. W. M. Dean, A.R.I.B.A., architect.

Margate.—Swimming Bath, Garden Row, for Mr. W. Leach Lewis.

Sheerness.—Higher Elementary School improvements (£500).

Tonbridge.—Council School, Sussex Road: improvements (£600).

Wrotham.—(See Borough Green.)

LANCASHIRE.

Colne.—Three cotton sheds for 4,000 looms, in the districts of Carrheys, Greenfield and North Valley Road.

Hendon.—Cotton shed for 1,200 looms.

Liverpool.—Workhouse Mortuary, Brownlow Hill. Mr. T. W. Haigh, architect.

Nelson.—Extension of Bankfield Mill, for the Westwood Manufacturing Co.

Radcliffe.—Hampson Mission School.

Wirral.—Workhouse extensions (£3,000).

LINCOLNSHIRE.

Bourne.—Isolation hospital for twenty-two beds (£4,850).

Louth.—Public Baths.

Skegness.—Two bungalows for Mr. H. Lill.

Stables for the Skegness Co-operative Society.

Villa for Mrs. L. J. Whiting.

MIDDLESEX.

Hendon.—Parish Church enlargement (£6,000).

MONMOUTHSHIRE.

Bedwas.—Twenty-six (or more) houses, for the Grove Building Club. Mr. G. L. Rees, architect.

Elanilleth.—Thirty-seven houses. (Apply Mr. C. T. Evans, Central Hotel.)

Tredegar.—Twenty-six houses, Park View, for the Cwm-rhos Building Club. Messrs. Harris & Son (of Bargoed and Tredegar), architects.

NORTHAMPTONSHIRE.

Kettering.—Art Gallery (£3,000).

NORTHUMBERLAND.

Morpeth.—Workmen's dwellings (£5,800).

NOTTINGHAMSHIRE.

East Markham.—Parish Hall (£600).

SOMERSET.

Taunton.—Swimming Bath (£3,000).

STAFFORDSHIRE.

Blowich.—Public Baths.

SUSSEX.

Coleman's Hatch.—Church, Shepherd's Hill.

Crawley.—Council School for 450 places.

Horsham.—Secondary school (Pupil Teachers' Centre). £1,750.

Lower Beeding Colgate.—Council School.

WORCESTERSHIRE.

Bournville.—Anglican Church, Vicarage, and Parish Hall (£10,000).

Pershore.—Two cottage homes, Defford Road, for the Board of Guardians.

YORKSHIRE.

Penistone.—Public Offices and Hall, Shrewsbury Road (£3,500).

Robin's Hood Bay.—House: Mr. H. P. Hopkins, architect; also

Warehouse for Mr. W. A. Smith.

Scarborough.—Roman Catholic Church, Avenue Victoria, South Cliff (accommodation for 350 people). £2,500.

Sheffield.—Public Elementary School for 600 places, Maltby Street and Walkland Road.

Thirsk.—Constitutional Club.

Wetherby.—District Council offices and depot (£1,120).

WALES.

Bettws and Blaenyrwch.—Council Schools.

Cardiff.—Chapel, Pomeroy Street, for the Trustees of the Mount Stuart Welsh Congregational Church.

Messrs. James & Morgan, F.F.R.I.B.A., architects.

Technical Institute (£40,000).

Llanidloes.—Workmen's dwellings.

Onllwyn (near).—C.M. Chapel, Banwen. Mr. J. S. Griffiths (of Neath), architect.

Pontlliw.—Council School.

Swansea.—Exchange buildings, Adelaide Street and Cambrian Place. Mr. C. T. Ruthen, architect.

Trebanos.—Council Mixed School.

SCOTLAND.

Clarkston.—Double cottage, Overlee, for Mr. J. Merry.

Giffnock.—Forty-four terrace houses, Busby Road, for Mr. M. Dickie.

Double Villa, Eastwood Avenue, for Mr. J. Taylor.

Glasgow.—Statute Labour Department buildings, Rutherglen Road.

Public Baths and Wash-houses, Garngad.

Double villa, Campsie Road, Hillpark, for Messrs.

Eadie & Sons.

Eight terrace houses, Third Avenue, King's Park, for Mr. M. Dickie.

Motor garage, Dunstaffnage, Newlands, for Mr. D. Borland.

Villa, Davieland Road, Whitecraigs, for Mr. A. Blackwood.

Greenock.—Two double-flatted villas, Denholm Street, for Messrs. R. & M. Kirkwood.

Westburn Sugar Refineries, Ltd.: extension of works, Drumfrochar Road.

Inverkeithing.—Board School (£25,000).

Kinloch-Rannoch.—U.F. Church manse (£500).

Kirkconnel.—Drill Hall for the Territorials. Mr. J. Young (of Sanquhar), contractor (£1,000).

Muirhead.—Board School. Messrs. Thoms & Wilkie, F.F.R.I.B.A. (of Dundee), architects. Separate trade contracts.

Scotstoun.—Nine terrace houses, Norse Road, for the Scotstoun Estate Building Co.; also

Fourteen terrace houses, Stuart Avenue.

Halls, Station Road, Scotstoun West, for Messrs. Henderson & McDonald.

Uplawmoor.—Cottage for Mr. G. L. Kerr.

IRELAND.

Cornelscourt (Co. Dublin).—National Schools. Messrs. Orpen (F.R.I.B.A.) & Dickinson, M.R.I.A.I. (of Dublin), architects.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 16,483. July 18, 1911.—Improvements in sash fasteners. F. G. Hallet, 65 Jeffcock Road, Wolverhampton. This invention has reference to fasteners as used in sliding windows, particularly adapted for high sashes as used in schools, public buildings, and the like, being readily locked and unlocked by means of a shaped pole known to the trade as a rod hook. Fig. 1 is an elevation of the catchpiece. Fig. 5 is a perspective view of the clutch. Fig. 9 shows the fastener assembled together, and in a locked position. Fig. 10 shows the fastener in an unlocked position. A is horizontally pivoted upon B, carried by the meeting rail of the lower sash, and is so weighted as to normally fall into position for N to engage with D. By applying a rod hook or by any

FIG 1

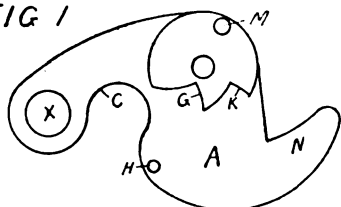


FIG 5



upward pressure under C or through X, the hook N is withdrawn from its normal position. D is securely fixed to the meeting rail of the upper sash, so that N engages with D, but in such a manner as to admit of the sashes being opened from the inside or outside by raising the lower sash or pulling down the top sash. To prevent this, and to make the fastener to lock and unlock from the inside only, E is also pivoted on one side of B, co-adjacent with G. The axis of E is preferably below that of A. The end F comes when A is in its normal position behind G, and locks A to resist upward pressure when applied through X or under C. A is provided with a stud, H, to limit the forward action of A, and also in order that when E has been operated and the

FIG 9

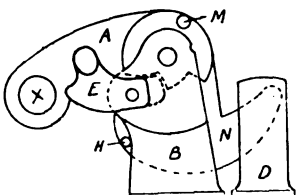
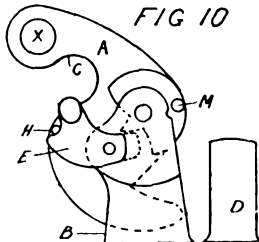


FIG 10



fastener is in an unlocked position H will come upon the top side of E near its backward end, and press F against K. Thus E, being prevented from turning, prevents A also from returning to its normal or locked position. The rod hook first presses against the lower curved edge of the backward end of E, thus freeing F from G, raises E until the finger of the pole comes in contact with C. Further upward pressure raises A, and draws N from D; the further upward pressure of rod hook continues to turn A until at a certain point H passes clear of the rear end of E (owing to the relative position of the respective pivot centres of A and E), whereupon the underside of the rear end of E falls upon a shoulder. The finger of the pole being withdrawn, A falls back until H bears upon top side of E, and A is retained in its unfastened position; that is to say, with the projection N clear of D. A stop, M, is provided on catchpiece A which, by bearing against B, limits the degree to which A can be turned when unfastening it. May 2, 1912.

PATENT SPECIFICATIONS PUBLISHED
AUGUST 15, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 16,774. July 21, 1911.—J. C. Thompson, Chilton House, Rosherville. Cocks or valves.

16,873. July 22, 1911.—K. H. A. Eckstein, 43 Steinerstr., Altona, Germany, and F. J. Poets, 2a Boersenbruecke, Hamburg. Safety locks.

16,947. July 24, 1911.—Date claimed under International Convention July 29, 1910. Ernst Gronau, Strassburg,

Elsass, Germany. Wall structure for liquid containing vessels.

16,984. July 25, 1911.—Ernest Delille, Montigny-en-Gohelle, France. Process of manufacturing light constructions of reinforced concrete.

17,032. July 25, 1911.—H. N. Davis, The Diamond Foundry, Luton, and W. R. Twigg, Woolverston, Westbourne Road, Luton, Beds. Gas fires.

17,048. July 25, 1911.—R. B. Lucas, Shillington Manor, Hitchin. Method of getting clay, chalk and the like.

18,341. Aug. 14, 1911.—A. F. Jenkins, 507 West Lombard Street, Baltimore, Maryland, U.S. Acetylene gas generating systems.

19,399. Aug. 31, 1911.—Thomas Coleman, Alfreton Road, Derby. Treating stone or other materials for making roads.

19,974. Sept. 7, 1911.—L. Van den Driessche, 222 rue Masui prolongee, Brussels. Gas stoves.

20,351. Sept. 14, 1911.—J. A. Getty, 137 Tressillian Road, Brockley, S.E. Kitchen ranges.

20,704. Sept. 19, 1911.—J. S. Deacon, 4 Seymour Avenue, and F. V. Woodford, 128 Thackeray Avenue, Tottenham. Means for enabling objects to be attached to ferro-concrete buildings.

21,168. Sept. 25, 1911.—J. Y. MacAlister, Northwick House, St. John's Wood Road, Middlesex. Electrical plug switches.

22,089. Oct. 7, 1911.—F. W. Pinson, Dale Works, Dimmingsdale, Willenhall, Staffs. Padlocks.

23,642. Oct. 26, 1911.—Joseph Anderson, 5 Sutherland Street, Pimlico, S.W. Window holders for sliding sashes.

24,271. Nov. 1, 1911.—B. S. Weston, 5 Parkholme Road, Dalston. Means for straightening walls which are out of the perpendicular.

24,775. Nov. 7, 1911.—Date claimed under International Convention Nov. 21, 1910. A. A. Poulsen, Lemvig, Denmark. Process for producing an improved cement.

16,983. July 24, 1911.—G. A. C. Thynne and Thomas Pulling, Victoria Tile Works, Hereford. Improved brick for building kilns and ovens.

25,781. Nov. 18, 1911.—Ernest Mireau, 380 Adelaide Street West, Toronto, Canada. Heat concentrating and retaining device for use with gas stoves and like burners.

26,073. Nov. 22, 1911.—The Yorkshire Hennebique Contracting Co., Ltd., and G. W. Crawshaw, Viaduct Works, Kirkstall Road, Leeds. Helmets for use in the driving of reinforced concrete piles.

28,826. Dec. 21, 1911.—R. A. E. Brooks, 111 Priory Park Road, Kilburn, N.W. Gas bracket for heating, cooking and like purposes.

280. Jan. 3, 1912.—Solomon Barnes, 189 St. James Street, Montreal. Sand mixers and coolers.

2,334. Jan. 29, 1912.—S. T. Muhlhausen, 5 Hallessches Ufer, Berlin, S.W. Rolled up lattice shutters and the like.

3,109. Feb. 7, 1912.—Sozont Sandurskyj, 6 Tempelgasse, Vienna. Self-guide arrangements for parallel rulers.

4,148. Feb. 19, 1912.—John Radcliffe, "Maro," Capel Road, East Barnet, Herts. Improved compositions applicable for making and repairing roads.

4,406. Feb. 21, 1912.—Ozonair, Ltd., and E. L. Joseph, 96 Victoria Street, S.W. Mechanical filtration of water.

5,986. Oct. 5, 1911.—The Copeman Electric Stove Co., Flint, Michigan. Electrically heated ovens.

6,980. March 21, 1912.—R. H. Neal, A.M.I.C.E., M.I.M.E., 4 Mortimer Road, West Ealing. Interlocking concrete slabs or blocks for use in building concrete walls, sheet piling, groins, and other structures.

7,597. March 28, 1912.—Date claimed under International Convention March 30, 1911. Eugen Gerber and Felix Cusi, Colmar, Elsass, Germany. Key with movable wards.

7,883. April 1, 1912.—E. E. Barnard, Lynchburg, Campbell, Virginia, U.S. Attachments for drawing boards.

8,437. April 9, 1912.—W. A. Fraser, Georgetown, Halton, Ontario. Flushing cisterns for water closets, and any disinfecting means therefor.

8,530. April 24, 1911.—Mackintosh Hutchinson, 398 Queen Street, East Toronto, Canada. Sawing machines.

9,060. April 17, 1912.—Rheinische Buntpapierfabrik, G.M.B.H., Erkrath-Dusseldorf. Coloured transparencies or imitations of stained glass.

9,642. April 23, 1912.—S. L. Braun, 19 rue du Regent, Antwerp, Belgium. Glass cutter.

9,649. April 23, 1912.—Date claimed under International Convention May 17, 1911. W. E. Suess, of Taylor, William-son, Texas. Stop cocks.

9,744. April 24, 1912.—Luckenbach Inventions Development Co., 144 West Thirty-seventh Street, New York. Apparatus for mixing and distributing liquid bodies (paint).

9,758. April 24, 1912.—H. J. Rand, 1122 Osage Avenue, Kansas, U.S., architect. System of house drainage.

10,196. April 30, 1912.—Edward Bignell, Lincoln, Nebraska, U.S. Concrete piling.

— FIRE PROTECTION FOR NATIONAL AND UNIVERSAL EXHIBITIONS.*

THE primary principles of safety for exhibitions should practically be identical for all countries, the local conditions having but comparatively little effect on these enterprises. There are, however, but few codes of regulations existent in different countries, owing to the fact that exhibitions requiring buildings of a peculiar sort are generally classed in local by-laws as exceptional enterprises for which rules are to be issued to meet each individual case, and the necessary supervision is mostly left entirely to the discretion of the administrative officials.

The code here suggested might be easily applied to any exhibition, national or international, be it held in St. Petersburg, in Berlin, London, Paris, Rome, or Vienna.

Of course, an exhibition building could be made as safe practically as a perfectly devised theatre, but this would not be practicable from a financial point of view, for large exhibitions must always be conducted in what are essentially temporary structures that have to be erected at a minimum cost, compatible with utility and safety. Impracticable and expensive requirements cannot be formulated unless exhibitions are to be handicapped to such an extent that they cease to exist. But a practical minimum of useful requirements in the interests of the safety of the public, and also in the interest of such exhibits as are of particular historical or artistic value, should be formulated, and, be the exhibition a national one or an international one, the same safeguards practically hold good for the visiting public and the exhibitors.

In organising an exhibition the following should be observed from the fire point of view:—

LOCATION OF AN EXHIBITION.

1. *General Position.*—The position of the grounds should not be unduly exposed to gales, winds, &c.
2. *Accessibility.*—The exhibition grounds should be easily accessible from not less than two sides.
3. *Levels.*—The levels should be such that the gradients on the main roadways of the exhibition ground are easily drivable.
4. *Natural Water Supply.*—The position should be preferably on or near some natural source of water supply, such as a river or lake.

PRIMARY PRECAUTIONARY FEATURES.

5. *Extent of Fire.*—The primary precautionary feature for reducing the extent of the fire risk should be that of the isolation of buildings or blocks of buildings, and the subdivision of large buildings into parts, and their construction with due regard to the relative importance of the fire risk.
6. *Loss of Life.*—The primary precautionary feature for reducing the risk of loss of life should be the provision of exits in such a manner that the maximum distance from any point in the interior of an exhibition building to the open shall be, say, 80 feet, that two routes of exit shall be available, and that the exits be clearly indicated.
7. *Causes of Fire.*—The primary precautionary feature for reducing the risk of outbreak of fire should be the limitation of and control of the use of open lights and fires, smoking; the lighting, power and heating services and the use and storage of explosives, oils, spirits, and other highly inflammable objects.
8. *Control Service.*—The primary principle for obtaining an observance of the preventive requirements should be a reliable control service placed in responsible hands, with (a) an inspection service, and (b) a watching service.
9. *Fire Service.*—The primary principles for obtaining effective assistance for combating an outbreak of fire should be:—
 - (a) An extensive well-indicated fire-call system.
 - (b) A private well-trained fire service to be rendered by the watching service above named.
 - (c) A well-organised section of the public fire service

* Abstract of a Paper by Mr. Edwin O. Sachs, F.R.S.Ed., Chairman of the British Fire Prevention Committee, Vice-President Int. Fire Service Council, &c., presented at the International Fire Congress, St. Petersburg.

(divided into self-contained units of not less than, say, eight men per unit) with motor appliances, a unit to be within not more than, say, 1,000 yards distance from any point in the exhibition.

(d) A reliable system of rapidly obtaining additional effective assistance from the public fire service.

(e) A well-distributed and clearly indicated supply of first-aid appliances within, say, 100 feet from any point inside an exhibition building or 200 feet without.

(f) A water supply from two independent sources (one preferably natural) and a well-distributed hydrant system.

(g) Co-operation of the public fire service with the local police, military and ambulance services, and with the technical staff of the exhibition.

Mr. Sachs devoted the remainder of his paper to an elaboration of clauses 5-9. From it we take the following:—

SIZE AND SEPARATION OF BUILDINGS.

10. *Maximum Cubic Contents of Buildings.*—The cubic contents of buildings should be limited as follows, namely:

(a) No one building to exceed, say, 5,000,000 cubic feet.

(b) No one part of any building to exceed 1,000,000 cubic feet unless separated from the adjoining part by a wall of "partial" fire resistance, the openings in which are suitably fitted with doors or shutters.

11. *Separation of Buildings.*—The buildings should be separated on the following lines:—

(a) All buildings of more than 1,000,000 cubic feet should be at least 60 feet distant from any other such building.

(b) Buildings of 500,000 cubic feet upwards should be at least 40 feet away from any other building.

(c) It should be permissible for booths, small structures, &c., of under 100,000 cubic feet to be connected up or adjoin without being separated by walls of "partial" fire resistance if the total cubic extent of these adjoining buildings in any one block does not exceed 500,000 cubic feet and such blocks are not less than 40 feet away from any other such block or building, but this condition should not be applicable to any building used for side-shows, theatrical purposes or a restaurant having a seating capacity of over 300 people.

(d) Small structures, booths, &c., of under 100,000 cubic feet must be not less than 20 feet away from any other building of any description, unless forming part of a block of 500,000 cubic feet.

(e) Where a building contains irreplaceable works of art or historical exhibits, or where it contains administrative offices, a post office, telegraph or telephone office, a police or fire station, the distance from any other building should not be less than double the distance named above, but preferably more.

12. *Connecting up of Buildings by Covered Ways.*—It shall be permissible to join up any three buildings of 3,000,000 to 5,000,000 cubic feet, or any five buildings of 1,000,000 to 3,000,000 cubic feet, or any equivalent of buildings to the extent of 15,000,000 cubic feet, by suitable corridors or covered ways, known as connecting links, on the following conditions:—

(a) That the distance between the buildings to be linked up be as aforesaid (see Clause 11).

(b) That the section of the connecting link shall not exceed 1,000 square feet, with a minimum height of 20 feet.

(c) That the material used for the connecting link shall throughout be of a "partial" fire-resisting character excepting only the glazing.

(d) That it shall be possible to rapidly (i.e. within, say, 60 seconds) open up a drivable opening by doors or shutters at right angles to the connecting link, the opening to have slopes so as to make the way thus formed drivable.

(e) That no draperies or furnishings of an inflammable character be used within or on the connecting link.

(f) That the doors from the building into the connecting links be of a "partial fire-resisting" character.

(g) That no two such connecting links parallel or approximately parallel to one another shall be closer together than 200 feet centre to centre.

(h) That not more than four connecting links run serially either parallel or longitudinally.

(i) That where a building contains seating accommodation for more than 300 people and is used for restaurant, theatrical or side-show purposes, it shall not be connected up with any other building.

NUMBER OF FLOORS IN BUILDINGS.

13. *Floors.*—The number of floors permissible in individual buildings should be determined on the following lines:

A. *Ground Floor.*—No building should have a ground floor more than 4 feet above the external ground level at or near its main entrance.

B. First Floor.—No building should have a first floor available to the public except on the following conditions:—

(a) That in buildings of over 500,000 cubic feet the first floor be in the form of a gallery only, of not greater than one-third the superficial area of the ground floor, which gallery must have ample staircases of easy rise and tread at each extreme end or corner.

(b) That in buildings of under 500,000 cubic feet if complete first floors be applied, the same conditions as to staircases be compulsory, and that there be numerous suitable external casement windows, each of at least 8 square feet area to at least two fronts.

(c) That no first floor shall be higher than 30 feet above the ground floor.

C. Second Floor.—No building shall have a second floor available to the public, or any higher floor over any part of a building accessible to the public.

D. Basement.—No building used by the public shall have a basement or cellar unless the cellar have an external approach only, and be separated from the rest of the building by fire-resisting construction affording "partial protection."

(To be continued.)

COVENTRY MUNICIPAL BUILDINGS.

A LOCAL GOVERNMENT BOARD inquiry was held at Coventry on Thursday, last week, respecting the application by the Corporation for a loan of £67,000 for the erection of municipal buildings. The Inspector appointed was Mr. R. G. Hetherington, A.M.Inst., C.E. The Corporation was represented by the Town Clerk (Mr. G. Sutton) and the architects, Messrs. Garrett, Semister, Buckland & Farmer, of Birmingham, whose plans have been accepted, by Mr. E. Garrett and Mr. H. T. Buckland.

The Town Clerk pressed for the longest possible period of repayment on account of the permanent and substantial character of the buildings.

The Inspector replied he thought the limit was sixty years, but he would recommend the longest period the Board would grant.

Giving particulars of the proposed buildings, the Town Clerk said the scheme had been submitted to open competition, and about 160 architects took part. The assessor was Mr. Guy Dawber, F.R.I.B.A., and he was of opinion that the selected design could be carried out for £50,000. Some alterations were subsequently made in the plans and also owing to increased cost of labour and materials, the lowest of twenty-two tenders received was £60,375. The tenders were remarkably close, ranging from £60,000 to £64,000 with one or two exceptions. The tender provisionally accepted, subject to the loan being sanctioned, was that of Messrs. Wilcox & Co., Wolverhampton. As to the need for the municipal buildings a good deal could be said. At present all the officials were dotted about in various places.

The Inspector intimated he would go round and have a look at the present office accommodation.

It was also pointed out to the Inspector that the Corporation had just taken over the tramways, and that office accommodation would be required for this department; also that the City Council had to meet in St. Mary's Hall, where the accommodation had to be specially arranged every time the Council met. The scheme provided for a Council Chamber and committee rooms. There had been a scheme before the Local Government Board in 1907, which included shops on the ground floor, but on the advice of the Board this was abandoned, and the interval had been spent in getting the City Council resolved upon one definite idea.

There was no opposition, and the inquiry was closed.

VARIETIES.

MESSRS. WILLIAM SPROWSON & SON, of Constantinople, have been appointed architects for the first three principal exchanges of the Constantinople telephone system, the exchanges being stationed in Stamboul, Pera, and Kadikuey.

THE Mersey Docks and Harbour Board are about to reconstruct the dock wall at the south end of the west side of the Salthouse Dock, and to erect a shed on the quay, at a total estimated cost of £8,630.

MESSRS. TAYLOR & WALLIN, engineers, Newcastle and Birmingham, have been instructed by the Brampton Rural District Council to prepare a scheme of sewerage and sewage disposal for the village of Castle Carrock. This is the third scheme which the Brampton Council have entrusted to this firm.

MR. W. PARKINSON, headmaster of the Shipley Art School, has been appointed headmaster of the Burnley School of Art, vacant by the death of Mr. W. H. Hey. The salary is £250, rising to £300 a year. There were thirty-nine applicants.

MR. F. L. STANFORD, Local Government Board Inspector, held an inquiry at Boston, last week, into the application of the Town Council for sanction to borrow a loan of £7,370 for the rebuilding of the Town Bridge. There was no opposition.

MR. H. M. WHITEHEAD, engineer, of Cannock, has been instructed by the Audley Urban District Council to prepare a scheme for dealing with the sewage in the Council's area. The cost is expected to be about £15,000.

THE statistics of Public Education issued last week show that schools of art which were recognised numbered 218 in England, with 41,292 students, and in Wales 5, with 986 students. Evening and similar schools in England totalled 7,422, with 584,382 students, and in Wales 742, with 43,799 students.

THE Dublin Industrial Development Association considered at their last meeting the fact that at the present time there was a considerable importation of coloured marble into Ireland, and it was decided to urge upon the public the desirability of using the native material in preference, as very fine coloured marble is obtainable in this country.

AN inquiry was held on the 14th inst. by the Local Government Board into an application by the Fylde Water Board, which is constituted of Blackpool, Fleetwood, Lytham, and St. Anne's authorities, for a loan of £120,000 for the completion of the Grizedale Reservoir. It was pointed out that the population to be supplied was over 136,000, but during the busy week in August there was a temporary population of about half a million.

THE death has occurred at Fircliffe, near Matlock, of Mr. Charles Edward Dawson, one of the best known Derbyshire architects. Mr. Dawson was associated with the Sir Joseph and Lady Whitworth Hospital Trust, and was a member of the Darley District Council. He was a son of the Mr. Joseph Dawson who worked with Sir Joseph Paxton, the designer of Chatsworth and the Crystal Palace.

A CONFERENCE of building trade delegates has been convened to take place in Essex Hall, London, on October 21. The subject to be considered is the proposed amalgamation of all the unions in the building trade. Voting is now in progress, and is to be completed and sent to the Parliamentary Committee by Monday, September 30. It is proposed to call the new organisation the Amalgamated Building Workers' Union. The object is to unite the building trade unions, to maintain a fighting organisation, to take action nationally and internationally on the ground that the interests of all wage workers are identical, and to organise by industries as workers, instead of by sections as craftsmen, for trade purposes. There will be a uniform scale of contributions and benefits.

THE available cash balance in the funds of the Amalgamated Society of Carpenters and Joiners amounts to £84,846 8s. 3d. A year ago the amount stood at £100,766 12s. 7d. The Parliamentary Labour Representation Fund has also been reduced to £502 0s. 2d. The Executive Council declare that if their repeated appeals for support to this fund continue to be ignored, and they have to efface themselves as an organisation, the responsibility will rest upon the members. The election of Executive Councilmen for the Society is officially announced as follows:—Districts No. 1 to 11: Messrs. J. L. Wright, Glasgow; G. Scott, Leith; A. Gould, Hull; A. E. Andrews, Bolton; W. P. Dobson, Liverpool; F. Chew, Aston; E. H. Jarvis, Bristol; W. Barnes, Clapham; T. M'Partlin, Dublin; H. Crampton, Chicago; and A. G. Sanders, Toronto.

A WHITE Paper issued last week shows that from the passing of the Housing of the Working Classes Act in 1890 up to December 1905 eight loans to the amount of £10,300 for the erection of dwellings were sanctioned to five rural district councils. From January 1, 1906, to July 31 last forty-eight loans were sanctioned, amounting to £95,646 in respect of thirty-seven parishes. Another White Paper dealing with labourers' cottages in Ireland built under the Labourers Act shows that since the passing of the Act in 1883, 39,241 houses have been built, and 3,439 are building. Loans have been sanctioned amounting to £7,906,237, and the amount required to be raised annually in repayment was £242,250. The amount of the Exchequer contribution for the year ended March last was £30,811, and the amount of rent received from tenants of cottages and plots during the same period was £107,682.

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The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

** As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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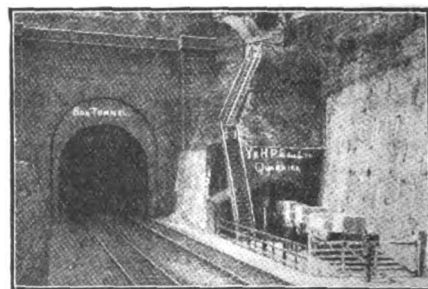
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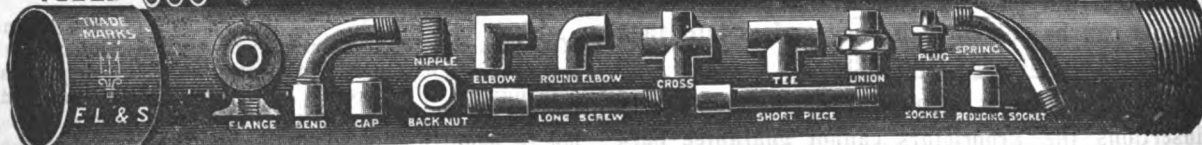
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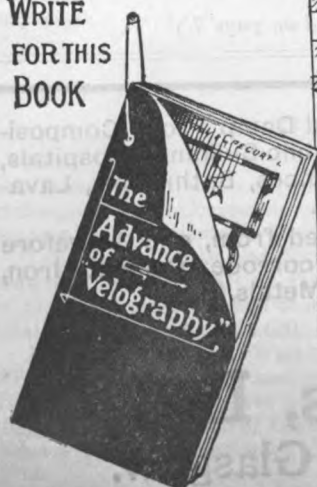
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CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

Huddersfield.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield. See Notice on page 126. (Competition News).

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

CONTRACTS OPEN.

ANDOVER.—Sept. 21.—For the construction of the following works, for the Corporation: Screen chamber, engine house, suction tank, 9-in. rising main, settling tank, holding-up tank, four circular bacteria beds, alterations and additions to existing storm-water tank, erection of cottage, and other works. Deposit £5. Messrs. J. Taylor, Sons & Santo Crimp, civil engineers, Caxton House, Westminster, S.W.

ARDSLEY.—Sept. 5.—The West Riding Highways Committee invite whole or part tenders for the following works to Hoyle Mill Bridge, over the River Dearne, in the urban district of Ardsley, near Barnsley—viz.: (1) Masonry and general works; (2) reinforced concrete construction. Mr. F. G. Carpenter, West Riding surveyor, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

BEXHILL-ON-SEA.—Sept. 21.—For the reinstatement of the wall to the gardens, and storm-water duct—the whole to be

in concrete, supported by six mild steel stanchions—for the Proprietors of the Kursaal. Deposit 10s. Mr. L. Burn, A.M.I.M.E., consulting engineer, 6 Holborn Viaduct, London, E.C.

BLACKBURN.—Sept. 23.—For erection of new public halls on Blakey Moor (sub-structure section), for the Corporation. Send applications and £1 1s. deposit to Messrs. Briggs, Wolstenholme & Thornely, and Messrs. Stones, Stones & Atkinson, joint architects, Richmond Terrace, Blackburn.

BOLTON-ON-DEARNE.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Bolton-on-Deerne new school—viz., builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Mexborough. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

BURY ST. EDMUNDS.—For erection of an infirmary wing and other works at the union, Mill Road. Deposit £5 5s. Mr. S. Naish, M.S.A., architect to the Guardians, 30 Abbeygate Street, Bury St. Edmunds.

CORNWOOD.—Sept. 5.—For certain additions, alterations and repairs to Delamore Farm. Mr. W. Harvey, Cornwood, Devon.

CUDHAM.—Sept. 21.—For the erection of a Council School to accommodate 120 scholars, at Cudham, Biggin Hill, for the Kent Education Committee. Send application and £1 1s. deposit by Sept. 4 to Mr. Fras. W. Crook, Secretary, Caxton House, Westminster, S.W. (See advertisement.)

EBBW VALE (MON.).—Sept. 9.—For erection of proposed 100 or more houses, in three classes, near steelworks, Ebbw Vale, Mon., for the Gwalia Building Club. Messrs. W. Harris & Son, architects and surveyors, Bank Chambers, Bargoed, or Mr. W. Williams, accountant, Station Chambers, Ebbw Vale.

EDGEFIELD.—Sept. 7.—For erection of three pairs of cottages at Edgefield, Norfolk, for the Erpingham Rural District Council. Mr. J. T. Willis, deputy clerk, Cromer Road, Sheringham.

FOLKESTONE.—Sept. 10.—For the extension of Folkestone post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at the Folkestone Post Office, and H.M. Office of Works, Storey's Gate, London, S.W.

FRIZINGTON.—Sept. 3.—For erection and completion of cart sheds and store-room, for the Arlecdon and Frizington Urban District Council. Mr. G. Ashbridge, surveyor, Council Offices, Frizington, Cumberland.

GISBURN.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works:—Gisburn new Council School and head teacher's house: Builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. Send £1 deposit in each case to the West Riding Treasurer, County Hall, Wakefield.

GOLCAR.—Sept. 6.—The West Riding Education Committee invite whole or separate tenders for the following works at Crow Lane Council school, Golcar—viz., additional classroom (builder, joiner, slater, plumber, plasterer, and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

GRIMSBY.—Sept. 17.—For erection of a new Council school in Victoria Street, for the Education Authority. Deposit £2 2s. Mr. H. C. Scaping, architect, Court Chambers, Grimsby.

HAILSHAM.—Sept. 11.—For erection of a small boiler house, boiler, store tank, two 5½ ft. cast-iron baths, and about 140 lineal yards of 4-in. cast-iron heating pipes, with all necessary drains, fittings, &c., for the Guardians of Hailsham Union. Mr. B. Catt, clerk, 17 London Road, Hailsham.

HOPE.—Sept. 7.—For the erection of a Council School at Hope, near Sheffield, for the Derbyshire County Council. Deposit £1 1s. Mr. George H. Widdows, A.R.I.B.A., County Education architect, St. Mary's Gate, Derby.

HORSHAM.—Sept. 3.—For work at the workhouse infirmary, consisting of alterations to an existing ward so as to form two separation wards. Messrs. Wheeler & Godman, architects, Horsham.

IRELAND.—Sept. 4.—For erection of additional offices at the rear of the water office, Royal Avenue, Belfast, for the Belfast City and District Water Commissioners. Mr. S. Stevenson, architect, 83 Royal Avenue, Belfast.

IRELAND.—Sept. 7.—For improvements and repairs to forty-seven houses and for rebuilding three others in Bandon,

for Mr. T. W. Wright. Messrs. Chillingworth & Levie, civil engineers and architects, 11 South Mall, Cork.

IRELAND.—Sept. 9.—For the erection of New Dublin Metropolitan Police Station in Great Brunswick Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Sept. 9.—For erecting and completing a Coast-guard Station at mouth of the Boyne, County Louth. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Sept. 18.—For the construction of Government Offices in Upper Merrion Street, Dublin. Deposit £5 5s. The Secretary, Office of Public Works, Upper Merrion Street, Dublin.

LEEDS.—Sept. 4.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Leeds new telephone exchange. Deposit £1 1s. The Postmaster, Leeds Post Office.

LEEK.—Sept. 5.—For erection of a public convenience at the corner of West and Mill Street. Deposit £1 1s. Mr. W. E. Beacham, C.E., surveyor, Town Hall, Leek.

LEIGH-ON-SEA.—Sept. 9.—For erection of offices and weighbridge foundations at their gasworks, for the Urban District Council. Deposit £2 2s. Mr. J. W. Liversedge, A.M.I.C.E., engineer and surveyor to the Council.

LINTHWAITE.—Sept. 3.—For the various works required in the conversion of a barn into two dwelling-houses at Smithriding, Linthwaite, Yorks. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

LONDON.—Sept. 7.—For building a waiting-room, consulting-room, and dispensary. Dr. Benjafield, Church Street, Edmonton, N.

LONDON.—Sept. 11.—For work, &c., required in the re-arrangement of wards at their workhouse, Reeves Place, N., for the Guardians of St. Leonard, Shoreditch. Mr. F. J. Smith, F.R.I.B.A., Parliament Mansions, Victoria Street, S.W.

LONDON.—Sept. 12.—For dispensary and grocery store fittings (joinery work) at their Forest Gate sick home, 95 Forest Lane, Forest Gate, E., for the Guardians of West Ham Union. Deposit £1. Mr. J. W. Dunford, architect, 100c Queen Victoria Street, E.C.

LONDON.—Sept. 12.—For erection of the buildings required for an extension of their electricity works at Millfields Road, Clapton, N.E., on the river Lea, for the Hackney Borough Council. Messrs. Gordon & Gunton, architects, Finsbury House, Blomfield Street, E.C. Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney.

LYMINGTON.—Sept. 6.—For the erection of municipal offices in the High Street. Deposit £1. Messrs. Newby, Vincent & Findlay Smith, Prudential Buildings, Above Bar, Southampton.

LUTON.—Sept. 9.—For the removal of the present buildings on the site of the public baths in Waller Street and the land adjacent thereto, and erection thereon of new public baths, for the Town Council. Deposit £2 2s. Mr. J. W. Tomlinson, A.M.I.C.E., borough engineer, Town Hall, Luton.

MACCLESFIELD.—Sept. 2.—For alterations to the receiving wards at the workhouse. Messrs. Whittaker & Bradburn, architects, King Edward Street, Macclesfield.

NORTHWICH.—Sept. 3.—For the purchase, demolition and removal of part of the Verdin Public Baths. Mr. John Brooke, C.E., surveyor to the Council, Council Offices, Northwich.

PLYMOUTH.—Sept. 3.—For the repairs to store No. 76 at Plymouth Docks, for the Great Western Railway Co. The Engineer at North Road Plymouth Station.

PORTLAND.—Sept. 5.—For erection of a brick pumping station and foreman's cottage near the Friar Waddon Road, Upwey, together with the provision, fixing, and setting to work of two borehole pumps and 136-h.p. Crossley gas engine with suction gas plant complete, for the Portland Urban District Council. Deposit £3. Mr. R. S. Henshaw, water-works engineer, Council Offices, Portland.

PORTSMOUTH.—Sept. 11.—For the following works, for the Guardians—viz.: (a) a boiler house, coal store, and heater room, on the Hennebique system; also (b) a chimney shaft with annular water tank, on the Monoshaft system of construction. Tenders will be considered for the boiler-house buildings and chimney shaft separately, or for both conjointly. Deposit £10. Mr. J. Buley, consulting engineer, Suffolk House, Laurence Pountney Hill, London, E.C.; or to the Clerk to the Guardians, 1 St. Michael's Road, Portsmouth.

PRESCOT.—Sept. 11.—For the following works, for the Guardians—viz.: (a) Erection and completion of a house in Warrington Road, Whiston; (b) erection and completion of a strong room at the union offices, Whiston (deposit £1 for a and b); (c) cleaning and painting the exterior and interior of six infirmary blocks at the workhouse, Whiston (deposit £1). Mr. W. Ellis, architect, 9 Hardshaw Street, St. Helens.

SCOTLAND.—Sept. 4.—The Cowal District Committee of the Council of Argyll are prepared to receive tenders for the erection of the following bridges, breast walls, and parapet walls, viz.: (1) The Manse Burn Bridge, Ardentiny; (2) Ardentiny Bridge, Ardentiny; (3) the School House Bridge, Ardentiny; (4) the bridge at the keeper's house, Glenfinart; (5) Barnacaber Bridge, Glenfinart; (6) breast walls and parapet walls at Ardentiny, Gairletter, and Loch Eck. Tenders for bridges to embrace bridges built of reinforced concrete and also of iron girders. Messrs. W. & W. Disselduff, Joint Cowal District Clerks, 160 Argyll Street, Dunoon.

SCOTLAND.—Sept. 6.—For the mason, carpenter, slater, plumber, plasterer, painter, and asphalt works of new public school and outside offices, &c., to be erected at Tarra-dale, Muir of Ord, for the Urray School Board. Mr. T. Munro, architect, &c., 62 Academy Street, Inverness.

SCOTLAND.—Sept. 9.—The Leith School Board invite tenders for the excavator, mason, brick and drainage works, carpenter, joiner, ironmongery, glazier and lather works, steel and iron works, slater work, cement and concrete work, plaster work, plumber work, tile work, painter work, electric light installation, and heating work of the David Kilpatrick School, to be erected in North Junction Street, Leith. Deposit £1. Mr. George Craig, architect, 85 Duke Street, Leith.

SOUTHOWRAM.—Sept. 4.—For the reconstruction of farm buildings at Park Nook. Messrs. Jackson & Fox, architects, 7 Rawson Street, Halifax.

STROUD.—Sept. 3.—For carrying out alterations at Roxburgh House, for the Guardians. Mr. G. P. Milnes, 7 Rowcroft, Stroud.

SULBY.—Sept. 10.—For erection of a new chapel, for the Trustees of Sulby Wesleyan Chapel. Mr. J. E. Teare, Athol Street, Douglas.

TOWCESTER.—Sept. 14.—For erection of seventeen houses, for the Rural District Council. Messrs. Jackson Stops & Co., architects, Town Hall, Towcester.

WALES.—Sept. 3.—For erection of girls' school and domestic subjects blocks at Troedryhiw, for the Merthyr Tydfil Education Committee. The Borough Architect, Town Hall, Merthyr Tydfil.

WALES.—Sept. 4.—For erection of twenty-eight or more houses on the estate of Mr. J. Davies, deceased, Bedwas, for the Grove Building Club, Bedwas. Mr. G. L. Rees, architect and surveyor, Tydfil Road, Bedwas.

WALES.—Sept. 9.—For the construction steelwork required in the extension of their works at Lower Penarth, near Cardiff, for the South Wales Portland Cement and Lime Co., Ltd. Mr. J. W. Rodger, architect, 14 High Street, Cardiff.

WORSTHORNE.—Sept. 11.—For erection of a temporary elementary school for 120 children at Worsthorne, near Burnley, for the Lancashire Education Committee. Builders' work consists of the foundations of the school buildings and the whole of the latrines, drains, fencing, and playground forming. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

TENDERS.

BINGLEY.

For the works required in alteration to and the construction of a new assembly hall in the central stores, for the Co-operative Society. Messrs. NUNNS & BRACEWELL, architects, Bingley.

Accepted tenders.

Parsons & Co., Bradford, iron and steel work	£1,030	0	0
Cordingley & Sons, Bradford, concrete and plaster work	790	0	0
A. & J. E. Hartley, Bingley, carpenters and joiners	394	0	0
Stubbs, Bradford, plumber and glazier	375	4	0
Wildman & Sons, Bingley, bricklayers and masons	228	0	0
Thornton, Bingley, slater	70	0	0

CAMBERLEY.

For the erection of a Wesleyan Methodist church. Messrs. GORDON & GUNTON, F.F.R.I.B.A., Finsbury House, Blomfield Street, London, E.C., and Mr. A. H. DUN-GAY, M.S.A., Alpha Chambers, Alexandra Road, Farnborough, Hants, architects.

		Revised tenders.
Spear & King	£3,180 0 0	£2,580 0 0
Crockerell	2,998 0 0	—
Crosby & Co.	2,989 0 0	—
Seward	2,988 0 0	2,556 0 0
Turner & Kersley	2,980 4 0	—
Martin, Wells & Co.	2,962 0 0	2,440 0 0
Privett	2,960 0 0	2,451 0 0
Butler	2,947 0 0	—
Bunning & Fitton Adams	2,937 0 0	2,397 0 0
Watson	2,859 0 0	2,423 0 0
W. W. KING, Camberley	2,824 9 6	*2,084 15 5
Kemp & Co.	2,739 0 0	2,239 0 0
Hughes	2,687 0 0	2,250 0 0
Jones Bros.	2,673 10 8	2,250 19 9

*Accepted.

ILFORD.

For alterations at 122 High Street. Messrs. NORTH & ROBIN, architects, Ilford.

Spiers & Son	£2,022 0 0
Bovis & Son	1,550 0 0
Nash	1,528 0 0
Barber & Sons	1,490 0 0
Clemens Bros.	1,455 0 0
Shurmur & Sons	1,439 0 0
Champion	1,410 0 0
Moffat & Gearing	1,406 0 0

IRELAND.

For erection of the Carnegie library, for the Kenmare District Council.

Jennings	£1,750 0 0
Mahony	1,721 0 0
Hill	1,625 0 0
J. Murphy	1,425 0 0
Sisk & Co.	1,398 0 0
Barry	1,393 0 0
M. Murphy	1,390 0 0
J. KELLY, Castlereagh (accepted)	1,337 0 0

ISLE OF WIGHT.

For sewerage work at Wroxall, for the Isle of Wight Rural District Council.

Rousell	£4,585 0 0
Hayles	4,068 0 0
Arthur	3,898 0 0
O. & E. Hayles	3,845 0 0
Streeter & Co.	3,595 0 0
Sims	3,580 0 0
H. LININGTON, Wroxall (accepted)	3,474 0 0

KENTISH TOWN.

For reinstatement after fire at Block A, Malden Factories, Malden Crescent, N.W., for executors of the late F. W. Rowney, Esq. Mr. WALTER J. EBBETTS, F.R.I.B.A., architect, Savoy House, 115 Strand, W.C.

HAMMOND (accepted) £620 0 0

LONDON.

For erection of mission hall, Becklow Road, Shepherd's Bush. Messrs. PRICKETT & ELLIS, architects, 57 Chancery Lane, London, W.C.

Staines & Co.	£8,266 0 0
Carmichael	8,099 0 0
Godson & Sons	7,950 0 0
Brown & Sons	7,695 0 0
Patman & Fotheringham	7,571 0 0
Chapman	7,100 0 0

For alteration and extension of boiler-house at the work-house, Swaffield Road, Wandsworth, S.W., for the Guardians of the Wandsworth Union.

Daniel Adamson & Co.	£3,630 6 0
Hammond	3,442 0 0
J. & F. May	3,367 0 0
Webster & Son	3,299 0 0
Johnson & Co.	3,297 0 0
Jewell	3,168 0 0
F. & G. Foster	3,163 0 0
Strand Building Co.	2,985 0 0
DOWSETT & JENKINS, Streatham (accepted)	2,795 0 0

SCOTLAND.

For the mason, joiner, plumber, plaster, slater, glazier, and painter works of new school at Muirhead of Liff, for the Liff, Benzie, and Invergowie School Board. Messrs. THOMS & WILKIE, F.F.R.I.B.A., architects, Dundee.

Accepted tenders.

Gray & Sons, Newtyle, masons	£735 13 3
Sturrock, Lochee, joiner	411 9 0
Brown, Dundee, plumber	168 0 0
Masterton, Forfar, plasterer	107 12 10
Brand & Son, Arbroath, slaters	82 3 6
Morrison, Dundee, painter	46 3 9
Kirk, Dundee, glazier	10 15 10

STROOD.

For the erection of sanitary offices at the Station Road schools, for the Education Committee.

Edmonds	£229 0 0
Webb	220 0 0
Finnis	210 0 0
E. WILMOT (accepted)	190 0 0
Osborne	186 5 0

TERRINGTON ST. CLEMENT (NORFOLK).

For erection of entrance lodge. Mr. E. A. WALKER, architect and surveyor, Wisbech.

Rilett	£441 15 0
Rands & Son	410 0 0
Read & Wildbur	405 0 0
Tash & Langley	390 4 6
Reeder	380 0 0
EGGLETON, Terrington, King's Lynn (accepted)	350 0 0

WALES.

For erection of twenty houses at Ystrad Mynach, for the Darran Building Club. Messrs. SEABORNE & CAYLEY, architects, Hengoed.

Edwards & Co.	£4,580 0 0
Smith	4,060 0 0
Forsyth	4,000 0 0
E. James	3,880 0 0
Jones	3,850 0 0
Morgan & Davies	3,640 0 0
Lewis & Sons	3,640 0 0
T. JAMES, Pontllanfraith, Mon. (provisionally accepted)	3,510 0 0

WEDNESBURY.

For alterations and additions to the public baths and municipal offices respectively, for the Corporation. Messrs. SCOTT & CLARK, M.S.A., architects, Wednesbury.

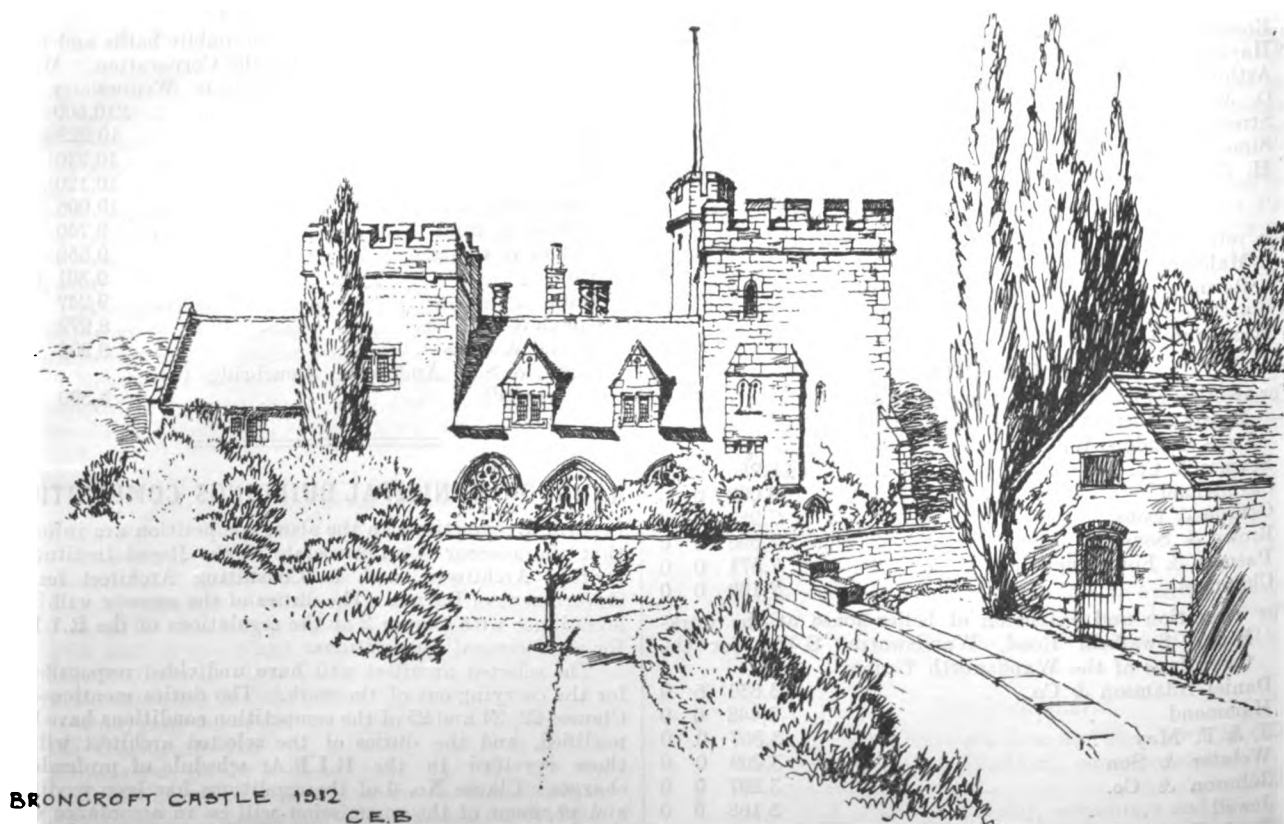
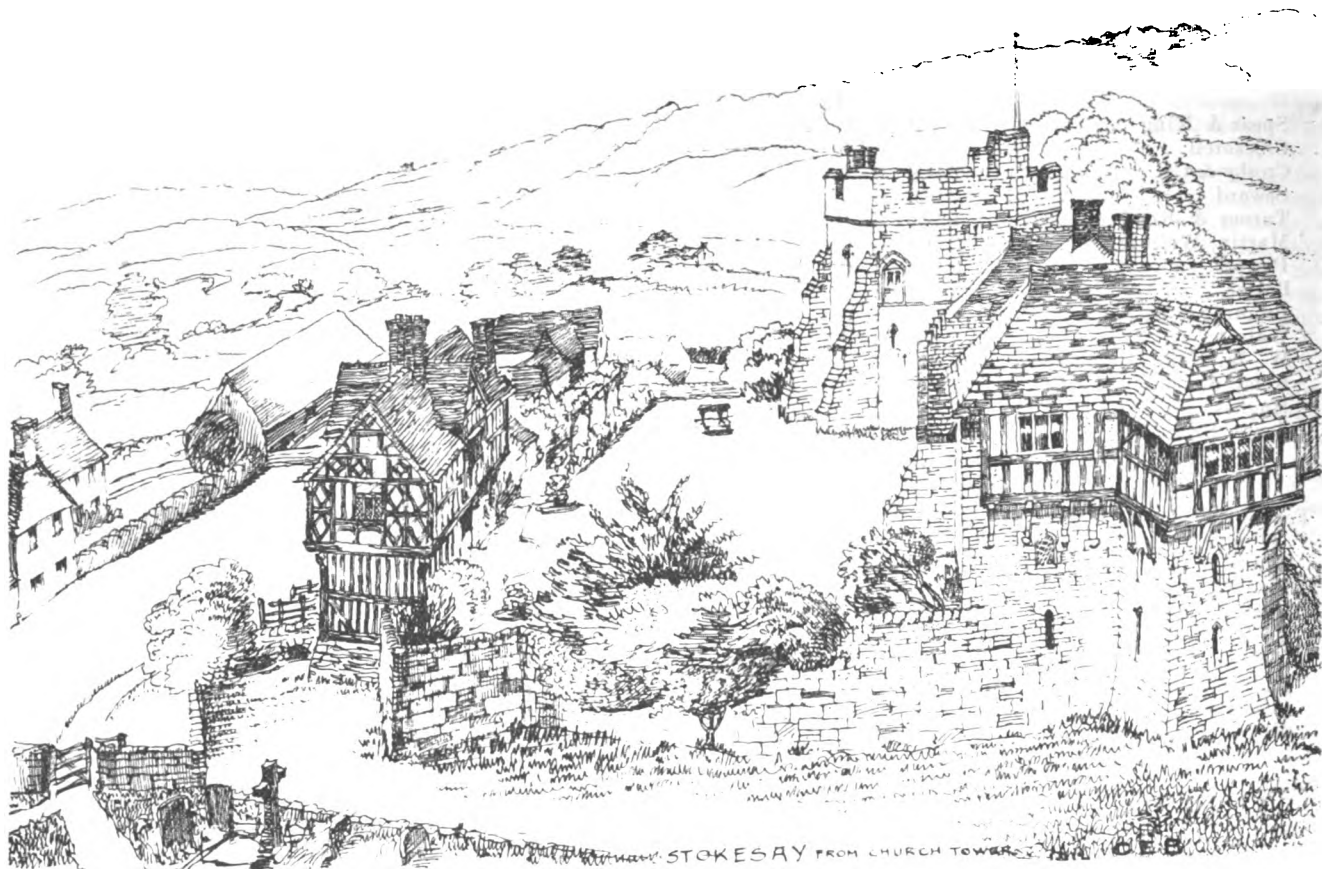
Wistance	£10,500 0 0
Hammonds Bros.	10,222 0 0
W. B. & F. T. Archer	10,210 0 0
Smith & Son	10,120 0 0
Summerhill and J. & G. Jellyman	10,096 4 0
Dallow & Sons	9,740 0 0
Oakley & Coulson	9,558 0 0
Probert	9,391 13 8
Dorse	9,247 7 1
Gough & Son	8,972 0 0
Round & Sons	8,908 0 0
GUEST & SON, Amblecote, Stourbridge (accepted)	8,500 0 0

RANGOON MUNICIPAL BUILDINGS COMPETITION.

INTENDING competitors in the above competition are informed that the assessor is an Associate of the Royal Institute of British Architects, and is Consulting Architect for the Government of Burma. The duties of the assessor will be in accordance with Clause 2 of the regulations of the R.I.B.A. for architectural competitions.

The selected architect will have undivided responsibility for the carrying out of the work. The duties mentioned in Clauses 22, 24 and 25 of the competition conditions have been modified, and the duties of the selected architect will be those specified in the R.I.B.A. schedule of professional charges. Clause No. 4 of the conditions has been modified, and payment of the commission will be in accordance with the R.I.B.A. schedule of professional charges. The plan numbered "6" in Clause 19 of the conditions may be omitted by competitors.

THE ARCHITECTURAL ASSOCIATION EXCURSION, 1912



Sketches by Mr. C. E. BATEMAN, F.R.I.B.A.

THE ARCHITECTURAL ASSOCIATION EXCURSION, 1912.



LITHO BY
O. H.
UNIVERSITY
OF CALIFORNIA

PITCHFORD SE WING 1912 C.E.B



PRESTON BROOKHURST, 1912.]

Sketches by Mr. C. E. BATEMAN, F.R.I.B.A.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE.

- Birkenhead*.—Primitive Methodist Church, New Chester Road, New Ferry.
Chester.—King Edward VII. Memorial wings to the General Infirmary.
Macclesfield.—Council School, Church Street, Hurdfield: improvements (£1,000).
 St. George's School, High Street: alterations and improvements. Messrs. Whittaker & Bradburn, architects (£3,000).

CORNWALL.

- Redruth*.—Drill Hall. Mr. T. Knight, contractor.

DERBYSHIRE.

- Burton-on-Trent*.—Workhouse Children's Home.
Derby.—Union Workhouse: boiler house alterations, &c. Mr. F. C. Coulthurst, architect.
Hope (near Sheffield).—Council School. Mr. G. H. Widows, A.R.I.B.A. (of Derby), architect.

DEVON.

- Exmouth*.—Drill Hall, &c., for the 4th Wessex Brigade, R.F.A., of the Territorial Force Association. Messrs. Ellis, Son & Bowden (of Exeter), architects.

DORSET.

- Poole*.—Alderney Isolation Hospital: additions and alterations. Mr. S. Newman, F.R.I.B.A., Borough surveyor.

DURHAM.

- Hartlepool*.—Workhouse extensions. Mr. F. W. Turner, architect.
South Shields.—High School for boys: gymnasium and handicrafts department (£500).

HAMPSHIRE.

- Totton*.—Police Station: additions and alterations (£900).

KENT.

- Faversham*.—Baptist Church: vestries, class-rooms, &c. (£800 to £900.) Messrs. Ratcliff Brothers, contractors.
Hollingbourne.—Union Workhouse: boiler house, &c. Mr. E. A. Gardner (of Maidstone), engineer.

LANCASHIRE.

- Worsthorne*.—Temporary Elementary School for 120 places. Mr. H. Littler (of Preston), County architect.

LINCOLNSHIRE.

- Donington*.—Working-class dwellings (£1,100).
Grimsby.—Council School, Victoria Street. Mr. H. C. Scaping, architect.
Lincoln.—No. 260 High Street: alterations. Mr. K. S. Bayne (of Bracebridge), architect.

MIDDLESEX.

- Hounslow*.—Congregational Church Hall and Institute, Douglas Road. Mr. W. Tout (of Hendon), contractor (£4,450).
Isleworth.—Mission Church. (Apply Rev. W. M. Rapson.)
 St. John's Church Hall.

NORFOLK.

- Caister-on-Sea*.—Conservative Hall, Tan Lane.
Hanworth.—Church restoration (£600).

NORTHAMPTONSHIRE.

- Northampton*.—Premises, New Street: alterations for Mr. J. W. North.
Towcester.—Seventeen Council houses. Messrs. Jackson, Stops & Co., architects.

NOTTINGHAMSHIRE.

- Retford*.—Isolation Hospital.
Worksop.—Priory Church restoration (£12,000).

STAFFORDSHIRE.

- Wolverhampton*.—Metropolitan Bank premises, High Street: re-building.

SUFFOLK.

- Bungay*.—Six working-class dwellings for the Town Feoffee.
Southwold.—Catholic Church.

SURREY.

- Camberley*.—Wesleyan Methodist Church. Mr. W. W. King, contractor.
Leatherhead.—London County and Westminster Bank premises, Swan Corner. Mr. W. H. Brown, contractor.

WORCESTERSHIRE.

- Broadway*.—Sixty working-class cottages (£10,000).
Knightwick.—Sanatorium enlargement.

YORKSHIRE.

- Gisburn*.—Council School. Education Architect, Wakefield.
Newhall (Sheffield).—Eyre Memorial Church.

WALES.

- Aberavon*.—Cottage and accidents hospital (£2,500).
Builth Wells.—Fire Engine Station, &c. Mr. T. Smith, Council surveyor.
Caerphilly.—Four pairs of semi-detached houses on the Fairfield Estate, for the Caerphilly Co-operative Garden Village Society, Ltd.
Glyncorrwg.—Three shops and coachhouse, Cwmmwr. Mr. P. J. Thomas (of Bridgend), architect.
Llanelly.—Council Schools for 1,000 places, and Domestic Subjects Centre, Stebon Heath Terrace.

SCOTLAND.

- Coatbridge*.—Board School, Drumpellier Street, for 700 places (£7,200).
Drunlembie.—Drill Hall for the Argyll and Sutherland Highlanders. Mr. D. Hamilton, contractor.
Dundee.—Electric Sub-station.
Falkirk.—Bakery, Dalderse Avenue, for the Bainsford and Grahamston Co-operative Bakery Society.
Glasgow.—Training College, Jordanhill.
Guardbridge.—Paper Works extension (£50,000).
 Bakery extension, for the Co-operative Society.
 Workmen's houses, for the Co-operative Society.
Motherwell.—High School.

IRELAND.

- Bray*.—Working-men's dwellings (£10,000).
Roscommon.—Sanatorium.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roota, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 22,359. Oct. 10, 1911.—Date claimed under International Convention Oct. 10, 1910. New or improved machine for manufacturing hollow bricks closed on all sides. Dr. August Kahr, Kattowitz, Upper Schleswig, Germany. Hitherto in forming extruded bricks it has been usual to manufacture hollow bricks closed on all sides by alternately forming hollow and solid clay bars, this being effected by removing the core employed for forming the hollow bars during the formation of the solid bars. It was, consequently, necessary always to make the core longer than the mouthpiece. This occasioned difficulties in the construction of the press, because if these were to be constructed with the usually relatively long mouthpiece, then the core would have to be exceedingly long. The movement of the core was effected from the mouthpiece in two ways: Firstly, by displacement, the core being conducted along in an opposite direction to the forward pressure of the clay mass, and, secondly, by rotatively arranging the core. This, however, excluded the use of a normal mouthpiece, because by arranging the pivoting point behind the mouthpiece the radius to be described would be so large that even at the commencement

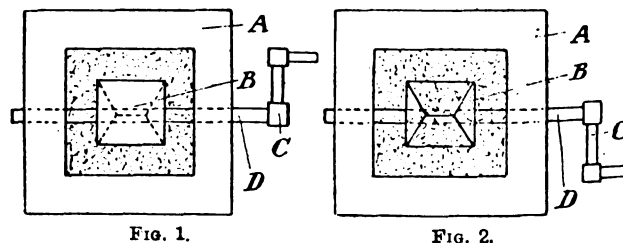


FIG. 1.

FIG. 2.

of its movement the core would strike against the walls of the mouthpiece. This invention is designed to remove the foregoing objections. Within the known type of mouthpiece a cone-shaped or truncated cone-shaped or pyramid-shaped form of core is adapted to be rotated or partially rotated upon a spindle or axle within the said mouthpiece by a crank or eccentric. The core is so mounted that upon its rotation there always remains so much space between it and the walls of the mouthpiece of the press that a hollow clay bar of normal dimensions can always be formed. When the apex or point of the wedge or core is turned towards the

blade shafts of the press, a continuous hollow clay bar will be formed within the mouthpiece. The walls closing the hollow bricks are formed by rotating or partially rotating the wedge or core through an angle of 180° , at which position the clay will converge towards the point of the wedge, forming a solid clay bar at this point. Fig. 1 is a cross section of the mouthpiece, with the broad surface of the wedge or core or former turned towards the front. Fig. 2 shows a similar section, with the point of the wedge turned towards the front. Fig. 3 is a longitudinal section, with the wedge

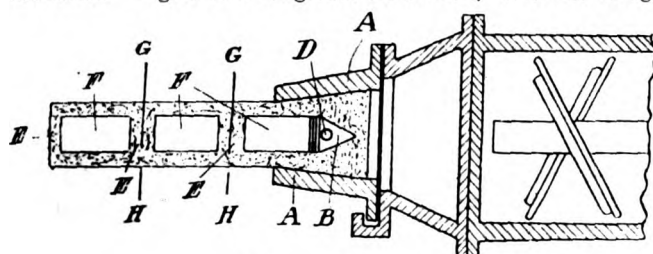


Fig. 3.

or core in the position shown in fig. 1. A is a mouthpiece, in which is rotatively mounted the core, B, and which may be rotated by means of a crank, C, upon a spindle or axle, D. The core, B, is shown situated with its point or apex turned towards the blade shafts of the press, with its base facing the mouthpiece. In this case a hollow bar, F, will be formed within the said mouthpiece. Fig. 2 shows the core, B, turned or rotated through an angle of 180° , so that its broad side or base faces the blade shafts. The apex or point of the wedge or core facing the mouthpiece causes the clay to converge towards the centre, thereby forming a solid bar, E. It is evident that by correspondingly turning or rotating the wedge solid bars, E, and hollow bars, F, can be alternately formed. It is only necessary to separate these bars at the solid portions, G, H, in a known manner in order to obtain hollow bricks closed in on all sides. June 12, 1912.

PATENT SPECIFICATIONS PUBLISHED AUGUST 22, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 13,921. Nov. 22, 1911.—Frank James, 120 St. Benedict's Street, Glastonbury. Circular saw benches and attachments thereto.

17,457. Aug. 1, 1911.—Heenan & Froude, Ltd., 4 Chapel Walk, Manchester. Apparatus for raising or lowering materials.

17,470. Aug. 1, 1911.—Daniel Atkinson, 1 High Lane, Ridgeway, near Sheffield. Means for preventing overwinding of elevators or lifts.

17,549. Aug. 2, 1911.—James Garvie, 6 Fowkes Buildings, Great Tower Street, London. Making concrete pipes in situ.

17,720. Aug. 3, 1911.—John Croft-Smith, 28 Baker Street, W. Windows, doors, and the like.

18,650. Aug. 18, 1911.—Nicholas Soyer, 118 Long Acre, W.C.; James Spicer & Sons, Ltd., 50 Upper Thames Street; and Capt. W. D. Douglas-Jones, St. Stephen's House, Victoria Embankment, London. Cooking ovens.

20,957. Sept. 22, 1911.—D. J. Jarvis, North Evington Engineering Works, London Street, Leicester. Sandpapering, emery-grinding, and analogous machines.

21,469. Sept. 29, 1911.—Richard Wilson, 72 Pinfold Lane, Skerton, Lancs. Joint for wooden eaves, spouts or gutters.

21,477. Sept. 29, 1911.—Frederick Higham, 48 Rosamund Street West, Chorlton-on-Medlock, Manchester, and A. E. Turner, 172 Medlock Street, Hulme, Manchester. Gas and like valves.

21,697. Oct. 2, 1911.—J. G. A. Rhodin, 96 Albert Street, Camden Town, N. Manufacture of cement.

22,530. Oct. 12, 1911.—C. C. Carpenter, 709 Old Kent Road, London. Gas fires.

23,010. Oct. 18, 1911.—G. G. Brodie and J. D. Prior, Eagle Foundry, Catherine Street, Aston, Birmingham. Cooking ranges.

23,205. Oct. 20, 1911.—Titus Searson, Eversleigh House, Jacksdale, Notts. Jointing of earthenware pipes.

26,475. Feb. 26, 1912.—R. W. Anderson, 53 Derby Road, Bootle. Method of and means for insulating walls, ceilings, &c., against conduction of heat.

28,127. Dec. 14, 1911.—Frederick Ullmer, 72 Clissold Road, Stoke Newington, N. Lift valve for controlling the flow of liquids.

28,488. Dec. 18, 1911.—Toich Nakahara, 507 West 147th Street, Manhattan, U.S. Electric door openers.

29,391. Dec. 30, 1911.—Date claimed under International Convention Feb. 6, 1911. R. H. Lange and W. C. Knebelkamp, 701 Adde Street, Belleville, St. Clair, Illinois, U.S. Door holders.

968. Jan. 12, 1912.—Lucien Adenot, 9 Ave. de St. Ouen, Paris. Draft excluder for doors and the like.

1,439. Jan. 18, 1912.—Joseph Stokes and Hoskins & Son, Ltd., Neptune Works, Trinity Street, Bordesley, Birmingham. Ladders.

1,510. Jan. 19, 1912.—Haney Fire Apparatus Co., Stockton, California, U.S. Fire-fighting or extinguishing apparatus.

2,526. Jan. 31, 1912.—G. W. Ansley, Spokane, Washington. Nail extracting attachment for hammers.

2,802. Feb. 3, 1912.—S. M. Wilmot & Co., Ltd., and S. M. Wilmot, Albert Road, St. Philips, Bristol. Construction of gates for field, estate and general purposes.

4,322. Feb. 21, 1912.—Edward Hotton, Truro House, Carlton Hill, Brighton, and C. H. Harris, architect, Royal Pavilion, Brighton. Automatic apparatus for opening greenhouse windows, skylights, fanlights, and other hinged sashes.

6,407. March 14, 1912.—B. R. Wagner, Crimmitschau, Saxony. Steam heating apparatus.

8,200. April 4, 1912.—Arthur Packscher, 140 Herzbergstr., Lichtenberg, Berlin. Glazed frames.

8,243. April 4, 1912.—L. B. de Laitte, 73 Moorgate Street, E.C. Measuring devices of apparatus for carbureting air.

8,404. April 9, 1912.—Wilhelm Leigener, 6 Mittelstr., Verdingen-on-Rhine, Germany. Walls.

9,291. April 19, 1912.—L. O. Forman, 315 Montrose Avenue, South Orange, Essex, U.S. Hoisting apparatus.

13,707. June 11, 1912.—W. H. Tibbals, 209 E. Colvin Street, Syracuse, N.Y. Hand fire extinguishers.

THE ROYAL NATIONAL EISTEDDFOD AND WELSH HOUSING.

THE Welsh Housing Association, taking advantage of this annual function in Wales, proposed to the Art, Crafts, and Science section of the Wrexham Eisteddfod that the question of housing should be included in their lists of subjects. The arts committee readily responded, and the general committee with equal readiness approved of a competition scheme drawn up by the Welsh Housing Association, with the result that a prize of £50 was offered, to which the Association contributed.

The scheme of the competition was, broadly, as follows:—Plans were to be submitted for dwellings suitable for families of the wage-earning class, to let respectively at 2s. 6d., 3s. 6d., 5s. 6d. and 7s. (not including rates).

The general conditions were prepared so as to place all competitors in the same position, without regard to any particular site, and, as a consequence of these conditions, the designs themselves, as submitted, would not necessarily be those which would be actually carried out, but in each case might require modifications of size but not of principle or planning.

The conditions in other respects admitted of a great deal of elasticity, and, to quote a part of them, were intended "to afford assistance and guidance to builders, landowners, and house occupiers and others, in the provision and orderly maintenance of healthy homes and suitable amenities in Wales, as understood by the highest standard of practical hygienic science."

The businesslike stringency of the conditions was calculated to exclude the amateur, and to make the competition one worth the consideration of the professional and expert designer, and an examination of the drawings sent in and exhibited shows how effective in this respect the conditions have been. Twenty-nine competitors have sent in drawings, all of which show evidence of very considerable skill and expert knowledge, and in this respect have made the adjudication one of considerable anxiety and difficulty. The adjudicators in their award state that the twenty-nine sets of plans (119 drawings) show a great deal of good and careful work, and that some of them are excluded only through being confined to one or two types of cottages, while others have designed the four types. The whole of the drawings are on exhibition at Wrexham.

The judges considered that as this was a competition intended to provide cheap cottages for the working class,

they ought to give most weight to success in the two cheaper designs—namely, Classes A and B. They first selected thirteen as being the most promising, and by a process of elimination reduced these to five, and then to three. As a whole, the adjudicators thought that all the competitors were at their best when dealing with the smaller cottages but that hardly any of the competitors realised fully that in a very cheap cottage every inch of height above the necessary minimum is so much less in floor space, where it is so much more valuable than in added height.

In the final selection for the award, the designs sent in by "Betterment" and "Ivy" were considered to be of equal merit, having regard to the points in design of all four classes; but a third competitor made a very good rival and had decided merits, particularly in the cheapness and simplicity of his designs. The motto of the third in point of merit is "Black Circle," and although only one prize is given, the adjudicators had also regard for the very considerable merits of the designs of "Economist" and "Putting Green" by placing them fourth and fifth.

In the conditions set out for the competition, besides the money prize a medal or diploma was offered to competitors who sent in a treatise dealing with housing conditions as they exist in Wales, or in any particular Welsh county or group of counties. It is much to be regretted that no such treatises were sent in by any of the competitors, who contented themselves with a general description of the work they had prepared.

Under condition 11, the designs are technically the property of the Welsh Housing Association, and it is their purpose to be a medium between the designer and intending builders, so that some really valuable consideration may accrue to the competitors themselves should opportunity offer, and it is not at all unlikely but that the Association may utilise one or more of the designs, paying to the competitors the ordinary professional fees.

It remains only to be mentioned that one of the adjudicators is an architect practising in Liverpool, Mr. T. Taliesin Rees, F.R.I.B.A., and the other, Mr. Aneurin Williams, M.A., who is chairman of the Board of Directors of the Letchworth Garden City, and, it may be mentioned incidentally, is also a grandson of the famed Iolo Morganwg. These gentlemen were unanimous in their award, but had it been otherwise, Mr. Henry T. Hare, M.A., F.R.I.B.A., was to have been the umpire. Mr. Hare, it will be recalled, is architect to the Bangor University College.

NEW STAINED WINDOWS AT ST. BARBARA'S, ASHTON-UNDER-HILL.

THREE beautiful stained-glass windows, which have just been placed in the chancel of the church of St. Barbara, Ashton-under-Hill, Evesham, by Mr. Proctor Vernon-Wadley, were dedicated on Sunday. Those on the south side are designed with figures of the four Evangelists enclosed with borders and canopies, their respective emblems in the bases and emblems of the Trinity, &c., in the tracery. The north window represents St. Barbara, the patron saint. St. Barbara, with the Sacramental Cup in the first light, with an angel carrying a harp and chanting in the adjoining one; above these figures a choir of angels with musical instruments and carrying the crown, and in the tracery her emblem of the Tower. This dedication is interesting Ashton-under-Hill, being the only church in England dedicated to St. Barbara. There is a brass plate with inscription. The windows were designed and painted by Messrs. F. Holt & Co., Warwick.

TRADE NOTES.

UNDER the direction of Messrs. E. L. Maddock & Son, architects, Hanley, Messrs. Kershaw, Brasington & Co. have been favoured with an order for eighty-eight of Brasington's latest improved double-air pump extract ventilators in copper. They have also been favoured with the order for the ventilating work of the new secondary school at Lancaster for the Corporation, under the direction of Mr. Littler, county architect, Preston.

THE ring of eight bells (tenor 18 cwt.) of the parish church of Kirton-in-Holland, near Boston, Lincs., is to be rehung with iron headstocks and all modern fittings. The work of restoration, which includes the recasting of the seventh and fourth bells, is being carried out by Messrs. John Warner & Sons, of the Spitalfields Foundry, London.

THE new schools, Fakenham, are being supplied with Shorland's patent exhaust roof ventilators by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

VARIETIES.

THE Kilbirnie School Board have decided to erect a school for 400 children between Kilbirnie and Glangarnock. The plans have been prepared by Messrs. H. & W. Barclay, architects, Glasgow.

THE Dublin Joint Hospital Board last week appointed Mr. James Mackey, of Dublin, as quantity surveyor for the sanatorium for consumptives proposed to be erected at Crookslin at a cost of £30,000.

EXTENSIONS of King's Cross Hospital, Dundee, to cost £11,833, have been approved by the Public Health Committee of Dundee Town Council. The work includes the erection of a new pavilion for cases of measles.

At the last meeting of Camborne Urban District Council it was stated that the Local Government Board had sanctioned the North Cliff sewerage scheme and the loan of £24,750 for carrying it out. It was decided to hold a special meeting to consider the question of inviting tenders.

THE strike of Whitby builders' labourers has been settled by the acceptance of the men of the offer of the masters to concede an advance of $\frac{1}{2}$ d. per hour—namely, to $5\frac{1}{2}$ d. instead of the 6d. the men demanded. The advance will mean an increase of 2s. 0 $\frac{3}{4}$ d. per week, or 1s. 6 $\frac{1}{2}$ d., after the deduction of $\frac{1}{2}$ d. is made for the purpose of the Insurance Act, which was one of the reasons assigned for the strike.

THE Dundee builders have consented to increase the workmen's wages $\frac{1}{2}$ d. per hour. Various important contracts are on hand just now, and the hewers who have hitherto had 8 $\frac{1}{2}$ d. per hour will be paid 9d., while the builders will rise from 9d. to 9 $\frac{1}{2}$ d. The increased pay takes effect as from September 1.

A STEEL bridge across the Willamette River at Portland, Oregon, is nearly completed, says the British Consul. It has two roadways, the lower for railway traffic and the upper for street cars, both with double tracks. The lift span weighs 4,300,000 lb., and, to permit the passage of vessels, the lower deck telescopes against the upper one, and, if the height is insufficient, both are raised, leaving a passage way of 140 feet above high water, 252 feet wide. Its total length is 1,623 feet, and the steel trestle approaches measure 729 feet.

THE Humber Conservancy Board propose to carry out the following works, provided satisfactory terms are arranged with the Humber Commercial Railway and Dock Company: (1) The erection of a steel lighthouse, 125 feet high, carried on piles and connected with the shore by a ferro-concrete jetty. (2) The erection of a movable steel lighthouse, 100 feet high, constructed on a ferro-concrete staging, and connected with the high lighthouse by a ferro-concrete jetty. (3) The erection of a new lightkeeper's house on the mainland near the proposed high light.

THE old can be so old that it becomes entirely new. This was the view taken by Mr. C. B. Cochran when, as general manager of Shakespeare's England, Earl's Court, he decided to make the great autumn attraction a circus which would not only revive interest in England in this form of entertainment, but would, in fact, be the best of twelve Continental circuses. That Mr. Cochran was right in believing that the people would revel in the ring run on the latest lines is proved by the fact that in the first week some 80,000 visitors witnessed the big circus in the Empress Hall, and the number of spectators has grown daily since. The charm of this effort is that there is absolutely no waste product in the big circus: it is all good. There is nothing cheap about this entertainment save the price of the seats, which range from 6d. to 3s. Nothing so graceful or dashing as the Seven Human Aeroplanes has been seen in this country, and the aerial flights of these superb artistes rouse the plaudits of the people. Then there is such variety as a mélange of Continental clowns, the gymnastic feats of the Sisters Klos, the acrobat dash of twenty Arabs, the equestrian wonders of the Proserpi Family, the tumbling and balancing tricks of the Italia Troupe, the massing of sixteen of Busch's Berlin horses in the arena, and the wild charges of Mde. Beketow's six stallions. Then, by way of a sensational finale, there is the Motor Race in Mid-air, a most thrilling ride, in which, when the two cars leap into space, the rear one passes the leader and lands first on the second portion of the broken track. This is an absolute hair-raiser, and it is wonderful to learn that the intrepid motorists, a man and a woman, have never met with a serious accident. The big circus is but one of a host of novel attractions at Earl's Court, and there is no question that enterprise has made Shakespeare's England the resort of the holiday season. The programme is varied week by week.

THE Architect and Contract Reporter.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

•• As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

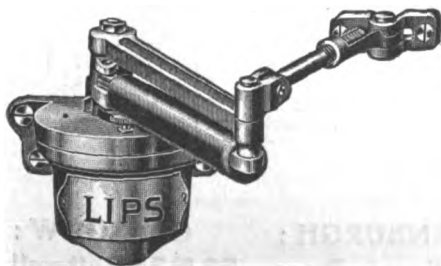
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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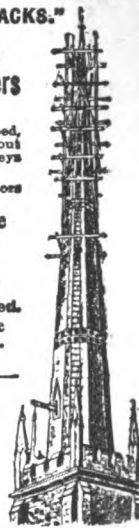
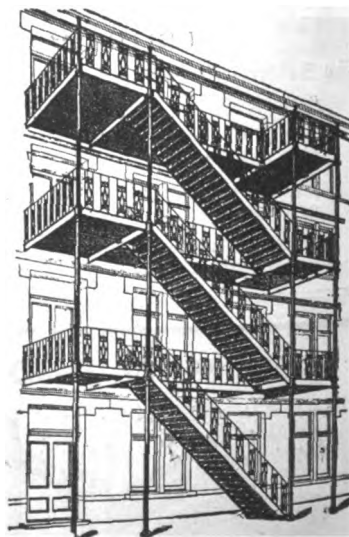
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CHORLEY.—Sept. 9.—The Chorley Education Committee invite designs for a Council school which they propose to erect in Duke Street, Chorley, to provide accommodation for about 500 children. A copy of the conditions with respect to the submission of designs may be obtained at the Education Office, Town Hall. Intending competitors may also obtain a block plan of the site from the Education Office on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide design. Designs must be sent by September 9 to Mr. J. Mills, town clerk, Chorley.

DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

CONTRACTS OPEN.

AXBRIDGE.—Sept. 19.—For constructing new latrine building on the men's quarters of the workhouse. The Board Room, Workhouse, Axbridge.

BEDWORTH.—For erection and completion of a Baptist Chapel, Coventry Road. Mr. T. R. J. Meakin, M.S.A., architect, 11 Warwick Row, Coventry.

BIRKENHEAD.—Sept. 16.—The Guardians are prepared to receive tenders for the supply and erection of a sounding screen in their boardroom in Birkenhead. Messrs. E. Kirby & Sons, architects, 5 Cook Street, Liverpool.

BLACKBURN.—Sept. 23.—For erection of new public halls on Blakey Moor (sub-structure section), for the Corporation. Send applications and £1 1s. deposit to Messrs. Briggs, Wolstenholme & Thornely, and Messrs. Stones, Stones & Atkinson, joint architects, Richmond Terrace, Blackburn.

BRIGHOUSE.—Sept. 13.—For erection of a shed, 132 feet by 62 feet, at Brookfoot Mills, for Messrs. Turner & Wain-

wright. Messrs. Sharp & Waller, architects, 32 Bradford Road, Brighouse.

BROADCLYST.—Sept. 16.—For the rection of new cow-houses at Clyston Mills, Broadclyst, Devon, for Sir Thomas Acland, Bart. Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

DUBHAM.—Sept. 17.—The County Council invite sole tenders for new Council School at Waldrige Lane (for about 450 scholars); alterations and additions at Birtley George Street and Wingate Council Schools; and erection of caretakers' houses at Horden Colliery Council School. Apply (1) for Waldrige Lane, Birtley George Street, and Horden caretaker's houses (plans, specifications, and conditions only for Horden), at the office of Mr. W. Rushworth, Shire Hall, Durham; (2) for alterations at Wingate, at the office of Mr. N. Richley, Shire Hall, Durham.

ELLAND.—Sept. 10.—For the mason's and bricklayer's, carpenter's and joiner's, plasterer's, plumber's and glazier's, ironfounders and structural engineer's, and concretor's work required in erection of a four-storeyed fireproof mill, 157 feet long by 70 feet wide, and chimney, 50 yards high, at Wellington Mills. Send names by Sept. 10 to Mr. T. Kershaw, A.R.I.B.A., architect, 26 George Street, Halifax.

ESKMEALS.—Sept. 16.—For extensions and alterations to the range house, Eskmeals, Cumberland, for Messrs. Vickers, Ltd., either for the whole of the work or for separate trades—viz.: (1) Excavation, concretor, drains, and tar-macadam; (2) waller and mason; (3) bricklayer and tiler; (4) carpenter and joiner; (5) plumber, glazier and painter. Deposit £1 1s. Messrs. Vickers, Ltd.

FOLESHILL.—For erection and completion of seven houses, Coventry Road and Windmill Lane, for the Lockhurst Lane (Foleshill) Industrial Co-operative Society, Ltd. Mr. T. R. J. Meakin, M.S.A., architect, 11 Warwick Row, Coventry.

GRIMSBY.—Sept. 17.—For erection of a new Council school in Victoria Street, for the Education Authority. Deposit £2 2s. Mr. H. C. Scaping, architect, Court Chambers, Grimsby.

HULL.—Sept. 18.—For the builder's and ferro-concrete work required in the construction of electricity sub-station at St. Andrew's Dock. Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

HULL.—Sept. 19.—For the necessary work to be performed in the erection of a fishermen's school in Boulevard, for the Education Committee. Deposit £2 2s. Mr. J. H. Hirst, city architect, Guildhall, Hull.

IRELAND.—Sept. 13.—For building a cinematograph theatre in King Street, Cork. Messrs. A. & H. H. Hill, architects, 22 George's Street, Cork.

IRELAND.—Sept. 13.—For erection of a caretaker's lodge at the Botanic Gardens, Glasnevin, Dublin. Deposit £1. The Office of Public Works, Dublin.

IRELAND.—Sept. 18.—For the construction of Government Offices in Upper Merrion Street, Dublin. Deposit £5 5s. The Secretary, Office of Public Works, Upper Merrion Street, Dublin.

IRELAND.—Sept. 25.—For the erection and furnishing of National School buildings at Derrinkehir, Ballinamore, Co. Leitrim. Royal Irish Constabulary Barracks, Ballinamore.

KENILWORTH.—Sept. 19.—For erection of lodge, chapel, &c., in connection with proposed cemetery, for the Urban District Council. Deposit £3 3s. Mr. S. Douglas, C.E., architect and surveyor, Council Offices, Kenilworth.

LEEDS.—Oct. 7.—For the supply and erection of a steel and corrugated iron building, and the necessary surface-water drainage of the same, at the permanent way depot, Sovereign Street, for the Tramways Committee. Send applications by Sept. 30 to Mr. J. B. Hamilton, general manager, Leeds.

LIVERPOOL.—Sept. 12.—The Guardians of the West Derby Union invite tenders from local firms for converting old laundry buildings at the workhouse, Rice Lane, Walton, into stores, engine-room, &c. The Master of the Workhouse.

LONDON.—Sept. 11.—For external painting, repairs to the stonework, and pointing work where required at their branch workhouse, Wood Green, N., for the Guardians of St. Leonard, Shoreditch. Mr. F. J. Smith, F.R.I.B.A., Parliament Mansions, Victoria Street, S.W.

LONDON.—Sept. 12.—For erection of the buildings required for an extension of their electricity works at Millfields Road, Clapton, N.E., on the river Lea, for the Hackney Borough Council. Messrs. Gordon & Gunton, architects, Finsbury House, Blomfield Street, E.C. Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney.

LONDON.—Sept. 12.—For the construction of a public underground convenience on the eastern side of Kingsland Road, to the north of Middleton Road, for the Hackney Borough Council. Mr. Norman Scorgie, M.I.C.E., borough engineer and surveyor.

LONDON.—Sept. 19.—For general repairs, painting, and lead roof works at the public baths, Kennington Road, S.E., for the Lambeth Borough Council. Mr. H. Edwards, C.E., borough engineer.

LONDON.—Sept. 25.—For constructing verandahs and for alterations to fire-escape staircases at the Brook Fever Hospital, Shooter's Hill, Woolwich, S.E., for the Metropolitan Asylums Board. Deposit £1 1s. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, London, E.C.

MITCHAM.—For erection of sixteen small houses at Mitcham. Mr. F. R. Goodall, estate agent, 4 High Road, Streatham, S.W.

MONMOUTH.—Sept. 18.—For concreting the floors of two dining sheds and a guard hut belonging to the Royal Monmouthshire Royal Engineers (Special Reserve), in a field about a mile and a half from Troy Station, Monmouth. The Officer Commanding Royal Monmouthshire Royal Engineers (S.R.), The Castle, Monmouth.

NORTHWICH.—Sept. 12.—For rebuilding the Constitutional Club and new central offices at Witton Street. Deposit £1 1s. Mr. J. Cawley, architect, the Bull Ring, Northwich.

NOTTINGHAM.—Sept. 11.—For erection of a school, Sneinton Dale, for the Education Committee. Deposit £2 2s. Mr. F. B. Lewis, city architect, Guildhall, Nottingham.

OLDHAM.—Sept. 11.—For the following works: (1) Erection of a cart shed in Rhodes Bank Yard; (2) re-slating roof, raising ceiling, &c., at Waterloo stables, for the Carrying and Cleansing Committee. The Borough Surveyor's Office, Town Hall, Oldham.

PRESCOT.—Sept. 11.—For the following works, for the Guardians—viz.: (a) Erection and completion of a house in Warrington Road, Whiston; (b) erection and completion of a strong room at the union offices, Whiston (deposit £1 for a and b); (c) cleaning and painting the exterior and interior of six infirmary blocks at the workhouse, Whiston (deposit £1). Mr. W. Ellis, architect, 9 Hardshaw Street, St. Helens.

REDCAR.—Oct. 2.—The North Riding of Yorkshire County Council Education Committee invite full tenders for erection of a cookery and manual instruction room at West Dyke Council school. Mr. Mennell, Cleveland District Education Office, Redcar.

SCOTLAND.—Sept. 13.—For the following departments of work in connection with the erection of proposed Town Hall, Portobello—viz.: Excavator, mason and brick work, carpenter and joiner work, plumber work, plaster, cement and tile work, steel and iron work, slater work, glazier, and asphalt works. Mr. James A. Williamson, A.R.I.B.A., architect, Public Works Office, City Chambers, Edinburgh.

SCOTLAND.—Sept. 14.—For the mason and bricklayer, carpenter, slater, plumber, plasterer, concrete, and painter works of new dairy premises, stabling, and covered yards, &c., to be erected at Waterloo Place, Inverness, for the Farmers' Dairy Co. Mr. T. Munro, architect, 62 Academy Street, Inverness.

SCOTLAND.—Sept. 17.—For erection of new Letter and Parcel Sorting Office, Perth. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. The Head Post Office, Perth, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Sept. 17.—For erection of a labour exchange at Lauriston Place, Edinburgh. Tenders are required for the whole work and not for separate trades. Deposit £1 1s. His Majesty's Office of Works, 3 Parliament Square, Edinburgh.

SALFORD.—Sept. 25.—For alterations and additions to the town hall, police department, and sessions court, for the Corporation. Deposit £2 2s. Mr. J. B. Broadbent, A.R.I.B.A., 15 Cooper Street, Manchester.

SHERBURN-IN-ELMET.—Sept. 12.—The West Riding Small Holdings and Allotments Committee invite whole tenders for additions to farm buildings at Sherburn-in-Elmet. The West Riding Land Agent, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

SULBY.—Sept. 10.—For erection of a new chapel, for the Trustees of Sulby Wesleyan Chapel. Mr. J. E. Tearse, Athol Street, Douglas.

SUMMERHILL.—Sept. 12.—For the execution of repairs, &c., at Gwersyllt Vicarage, Summerhill, Wrexham. Mr. J. H. Swainson, architect, 42 Regent Street, Wrexham.

TOWCESTER.—Sept. 14.—For erection of seventeen houses, for the Rural District Council. Messrs. Jackson Stops & Co., architects, Town Hall, Towcester.

WALES.—Sept. 17.—For the construction of foundations for a gasholder, for the Tredegar Urban District Council. Mr. D. W. Davies, Tredegar.

WALES.—Sept. 20.—For carrying out the following works: (1) Extensions and alterations at the Blaenllechau infants' Council school (deposit £1 1s.); (2) alterations at the boys' and girls' departments of the Cwmclydach Council school (deposit £1 1s.); (3) repairing and laying cement concrete at the Dinas boys' school playground (deposit 10s. 6d.); (4) repairing and asphaltting playgrounds at the boys' and girls' departments of the Williamstown Council school (deposit 10s. 6d.), for the Rhondda Urban District Council. Mr. J. Rees, architect, Hillside Cottage, Pentre.

WALES.—Sept. 24.—For the pulling down and reconstruction of the Star Hotel, Ystrad, Rhondda. Send names and £2 2s. deposit by Sept. 16 to Mr. T. E. Richards, A.R.I.B.A., architect and surveyor, Pontypridd and Cardiff.

WALES.—Oct. 2.—For erection of four houses at Cwm-rhydyceirw, near Morriston, Glamorganshire, for the Great Western Railway Co. The Engineer at Neath Station.

WARRINGTON.—Sept. 19.—For the supply and fixing of stone steps and iron railing for Howley footbridge, for the Bridges Committee. The Borough Surveyor's Office, Warrington.

WORSTHORNE.—Sept. 11.—For erection of a temporary elementary school for 120 children at Worsthorne, near Burnley, for the Lancashire Education Committee. Builders' work consists of the foundations of the school buildings and the whole of the latrines, drains, fencing, and playground forming. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

YORK.—Sept. 17.—For erection of an engine shed at York, for the North-Eastern Railway Co. Mr. William Bell, the Company's architect, at York.

TENDERS.

BISHOP'S CLEEVE.

For the provision and laying of 9-inch and 6-inch stoneware pipe sewers, together with manholes and lampholes; also the construction of sewage tanks, &c., laying out of land for irrigation, and other incidental works, for the Winchcomb Rural District Council. Messrs. PHILLOTT & GREGORY, engineers, Cheltenham.

Riley	£4,070	1	2
Bowen	3,380	18	8
Williams & Co.	3,227	6	4
Hill & Co.	3,068	10	0
JOHNSON BROS., Hereford (accepted)	2,937	2	3

BOLTON.

For the erection of verandahs, balconies and staircases at the Townleys Hospitals.

Amended tender.

R. WALSH, Bolton (accepted)	£582	8	0
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CHAPEL-EN-LE-FRITH.

For the construction of sewage disposal works. Messrs. BRADY & PARTINGTON, A.M.M.I.C.E., engineers, Chapel-en-le-Frith.

M. A. BOSWELL, Wolverhampton (accepted)	£8,259	11	4
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For the construction of new sewers, &c.

M. A. BOSWELL (accepted)	£8,890	15	8
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DOVE HOLES.

For the construction of a concrete service reservoir at Dove Holes, near Buxton, together with all the necessary valves, fittings, &c., for the Chapel-en-le-Frith Rural District Council. Messrs. BRADY & PARTINGTON, A.M.M.I.C.E., engineers, Chapel-en-le-Frith.

Airds, Ltd.	£5,794	3	0
Ashley	4,723	0	0
Sanders & Torrance	4,531	0	0
Bateman	4,124	3	5
Hyslop	3,993	7	6
EADIE & Co., Stockport (accepted)	3,972	5	10

LONDON.

For the erection of a picture theatre on the site of 140 Maida Vale, for the Maida Vale Palace, Ltd. Messrs. NORFOLK & PRIOR, architects. Quantities by Mr. A. O. BREEDS, Portugal Buildings, Lincoln's Inn Fields.

Dodson & Sons	£13,742	0	0
Allen & Son	12,989	0	0
Rice & Son	12,920	0	0
Downs	12,695	0	0
Perry & Co.	12,426	0	0
Spiers & Son	12,193	0	0
Neal	11,899	0	0
Bovis, Ltd.	11,897	0	0
Lawrence & Sons	11,872	0	0
Marrable	11,800	0	0
Minter	11,750	0	0
Easton	11,382	0	0
Kirk & Kirk	11,289	0	0

For rebuilding and alterations to Primitive Methodist Church and Sunday schools, at Forest Hill, S.E. Mr. J. W. F. PHILLIPSON, architect, Newcastle-on-Tyne.

Jones & Andrews	£4,399	0	0
Holliday & Greenwood	4,258	0	0
Goad	4,197	0	0
Black & Son	4,148	0	0
Hollingsworth	4,147	0	0
Crossley & Son	4,029	0	0
Smith & Son	3,983	0	0
Batley, Son & Holness	3,965	0	0
Thomas & Edge	3,891	0	0
PODGER & SON, College Road, S.E. (accepted)	3,840	0	0

ORSETT.

For erection of administrative buildings at the workhouse.

Carter, Ltd.	£536	0	0
Walsham	527	0	0
Brown Bros.	525	0	0
PAVITT BROS., Aveley (accepted)	417	0	0

OULTON.

For alterations and additions to the nurses' home, for the Guardians of Mutford and Lothingland Union.

Croft	£390	0	0
Rose	369	0	0
Leighton	348	17	0
Wales	339	10	0
Hindes & Co.	330	0	0
Warnes	320	0	0
Sewell	297	0	0
Ashby	292	0	0
Beckett & Son	290	0	0
Barham & Swan	288	0	0

SCOTLAND.

For works in connection with the erection of municipal offices at Hamilton, for the Town Council.

Accepted tenders.

Anderson & Sons, masons	£6,782	8	8
Burns & Co., carpenters and joiners	2,374	0	0
Bannatyne, plaster and concrete	717	4	7
Taylor, plumber	556	12	10
Brown & Son, tilers	320	4	2
McLaren, glazier	149	0	4
Bannatyne, slater	98	0	8

For carrying out the improvement scheme at the Corn Mill Square, Galashiels.

M'LEOD & SON, Edinburgh (accepted)	£2,289	0	0
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There were five tenders.

SOUTHALL.

For erection of Baptist schools in Western Road. Messrs. THOMAS & THOMAS, architects, Edgware Road, W.

Fassnidge & Son	£2,110	0	0
Willis	1,635	14	9
Dickens	1,500	0	0
Plaistowe	1,450	0	0
ASTON (accepted)	1,421	0	0

TALYWAIN.

For erection of three houses and shops at Talywain, Mon. Mr. J. LANGLEY, architect, Abersychan.

Thomas	£2,769	0	0
Branch	2,306	0	0
Bailey Bros.	2,250	0	0
Meara	2,195	0	0
Cudby	1,987	10	0
L. & A. DAVIES, Abersychan (accepted)	1,968	0	0

TAVISTOCK.

For carrying out a drainage system at the Union Workhouse.

G. DOIDGE, Marytavy (accepted)	£528	0	0
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TOLWORTH.

For painting and other repairs at the hospital, for the Tolworth Joint Hospital District Board. Mr. A. JESSOP HARDWICKE, F.R.I.B.A., architect, Kingston-on-Thames.

Budd	£367	0	0
Havell	365	18	0
Potterton	359	16	0
Impson	358	13	0
Bull & Esdaile	349	5	0
Benfield	349	0	0
Ide & Son	346	15	0
Schofield & Son	342	13	2
Powley Bros.	339	9	6
Scase & Sons	321	13	0
Gaze & Sons	313	0	0
Negus	303	0	0
Offer & Sons	264	0	0
WRIGHT & Co., Brixton Hill (accepted)	251	0	0

WHITEHAVEN.

For supplying and fixing two Cornish boilers, calorifiers, pumps, and radiators, with the pipes for heating and domestic hot-water service; new baths, lavatories, and sinks, including the necessary plumbing; and the supplying and fixing of a disinfecter, and other works connected therewith, at the workhouse, Low Road. Messrs. BESWICK & DAVIS, civil engineers and architects, Whitehaven.

Wembley Heating Co.	£2,905	0	0
Dargue, Griffiths & Co.	2,795	16	6
Moorwoods	2,734	14	0
Korting Bros., Ltd.	2,734	0	0
Dinning & Cook	2,712	0	0
Beaven & Sons	2,569	9	2
Killick & Cochran	2,450	0	0
Saunders & Taylor	2,350	0	0
Vulcan Engineering Co.	2,294	11	9
Burns & Co.	2,180	0	0
Haden & Sons	2,141	10	0
BRIGHTSIDE FOUNDRY AND ENGINEERING Co., Sheffield (provisionally accepted)	2,098	0	0

MESSRS. CRAVEN & SPEEDING BROTHERS, of Monkwearmouth, Sunderland, propose, it is stated, to establish new works at Doncaster, for the manufacture of wire ropes for collieries, steel hawsers, wire rigging, binder twine, and Manila ropes.

THE Glasgow Corporation have under consideration a recommendation of the special sub-committee of the Statute Labour Committee that a new road and bridge be constructed from Great Western Road, at Botanic Gardens, to the end of Queen Margaret Drive, at an estimated cost of £86,800.

THE Swansea Parliamentary Committee last week discussed the question of the development of the Corporation Town Hall site for building, and it was decided to communicate with the tramway engineers as to their terms for acting in the matter of constructing a tramway up Mount Pleasant so as to make the hill accessible.

MR. L. S. CARR has been appointed constructional engineer for the erection of the Corporation electric power station at Neshells, Birmingham. Mr. Carr, who is thirty-eight years of age, received his training at Rutherford College, Newcastle-on-Tyne. The salary for the appointment commences at £400 per annum, rising to £500 at the discretion of the Electricity Committee.

A COMPANY under the style of Walter Cawood, Ltd., has just been formed to carry on the business of the late Walter Cawood, Manchester, as organisers of exhibitions, &c., in Manchester, London, and other important towns. The directors of the company are Mrs. Catherine Cawood (widow of the late Walter Cawood), Mr. Frederick W. Bridges, 124 Holborn, London, E.C., the well-known exhibition organiser, and Mr. Charles H. Luke, joint organising manager with Mr. F. W. Bridges of the Engineering Exhibition, Olympia, 1912, and director of the successful Manchester Engineering Exhibition, October-November 1910. The registered offices are at 196 Deansgate, Manchester. Branch offices: 25a Paradise Street, Birmingham, and 37 West George Street, Glasgow.

NEW CATALOGUES.

"DURESCO: its Nature and Application," is an excellent pamphlet just issued by John Line & Sons, Ltd., Birmingham, to further popularise a water paint which has been before the public for over thirty years. The base of the material has always been a non-poisonous zinc-white pigment of permanent character, and of great body and density, while no whitening or calcareous matter enters into its composition. It was originally introduced as a treatment for new plaster on which neither size-colour nor oil paint could be successfully used. Since that time its uses have widened enormously, until now it is ranked as one of the best and most versatile friends of every house decorator. Duresco is stocked in three whites and about sixty tints, while intermediate tints may safely be obtained by blending or mixing one Duresco colour with another. An invaluable feature of the booklet is the account of various classes of Duresco work, both interior and exterior, with notes on methods of treatment. One notable example illustrated is the Birmingham Council House extension, the interior of which, with the adjoining museum and art galleries, was decorated with Duresco. The pamphlet is an eminently practical one, and contains much splendid information.

THE cardinal rule for good artificial illumination for all purposes is that the light should be well diffused with a preponderating downward direction, and freely flood ceilings and walls. Complaints are not infrequently heard as to the abysmal ignorance of architects on the important subject of illuminating engineering and of their readiness to be deceived by plausible agents and pretty fittings. There undoubtedly is something extraordinarily attractive in many of the up-to-date accessories of lighting. Yet, however elegant the designs may be, it must be remembered that beauty cuts a sorry figure unless accompanied by utility and consistency. Fortunately, these are strictly compatible. In Holophane glassware, for example, the three qualities are worthily combined. This particular variety has gained nothing short of a world-wide reputation for its reflecting capacity and its adaptation for the lighting of public buildings, hotels, shops, theatres, &c. Messrs. Siemens Brothers, Dynamo Works, Ltd., have just issued a twenty-page price list, No. D6, dealing with Holophane fittings, reflector-bowls and spheres, and giving an excellent selection of fittings specially designed for use in conjunction with the glassware. An effort has been made to produce fittings which could be used in practically every type of installation. There are, for example, new patterns of the "Household" Holophane for single "Wotan" and "Tantalum" lamps costing 3s. 6d., and for a Holophane pendant designed in the Georgian period costing 350s. Between these two there are many varieties of really excellent metalwork. Should, however, none of them be exactly what is required, the firm is willing to supply other designs to suit any period of decoration or for any special purpose.

MESSRS. S. W. FRANCIS & Co., LTD., 64-70 Gray's Inn Road, W.C., have brought out a revised edition of their illustrated catalogue and list of prices. Illustrated particulars are given of various rolling shutters, gun-metal shop fronts and fittings, collapsible metal gates, wrought-iron doors, swinging signs, full size sections of brass sash bars (nine pages), half full-size sections of machine drawn brass stall plates (five pages), and sketches of their plate glass facias and tablets. A suggestive list is given of some of the firm's recent contracts, which includes names sufficient in themselves to guarantee excellence. Particular attention is called to their new patent "No. 4" steel hinged self-acting pine wood shutter; the unique feature is that its best steel spiral springs run throughout the entire breadth of the shutter and bearing, thereby ensuring against any deflection from unevenly distributed weight. The only fault to be found with this catalogue is that its forty-eight pages are not prefaced by an index. It is scarcely sufficient in these days to group the various departments of a business together in a price list without a clear guide as to the contents.

THE Powell Wood-Process Syndicate, Ltd., Salisbury House, London Wall, E.C., have prepared an eighty-page booklet fully explaining their comparatively new method of rapidly seasoning, preserving and improving wood. It is just ten years since the value of saccharine matter as a natural wood preservative was discovered in an endeavour to prevent dry rot. The principle was that as sugar is crystallised sap, and thus an amorphous kind of wood, saccharine solutions would fill the interstices of wood, and so prevent the ingress of the mycelium of dry-rot. Since 1902 experiments have been continuously conducted, at a cost of nearly £20,000, to

perfect the process and to prove its efficiency. It found immediate favour in Australia and New Zealand, and plants are in active operation in those progressive countries, as well as in India. Works in the neighbourhood of London are expected by the syndicate to be finished in October. The process is natural and inexpensive. The timber is not subjected to any external pressure or vacuum. It is first immersed in a saccharine solution in open tanks. This solution is gradually raised to specific temperatures for certain periods, depending on the size, density, and purpose of the wood. The air and moisture of the wood escapes, the albuminous matters are coagulated, and the solution, otherwise liquid timber, is absorbed into the pores. The wood is next placed in a drying chamber. When sufficient desiccation has taken place the wood is absolutely seasoned and ready for immediate use. The time occupied is generally a few days, though in special cases it may extend to three or four weeks. The Chief of the Department of Applied Chemistry of the Indian Institute of Science stated in 1909 in his report, "no amount of exposure to weather could remove the saccharine matter from the wood, so there seems to be no way whereby thoroughly Powellized wood could decay or rot. . . . By the treatment, woods appear to become more close grained and capable of taking a better polish. . . . The process communicates no smell to the wood, and does not remove any odour which the natural wood may happen to possess. . . . Powellized wood seems to be less inflammable than the same wood in its natural condition."

THE manufacture of cooking apparatus is an important part of the Carron Company's huge business. About twelve months ago they brought out a catalogue of nearly two hundred pages, which dealt exclusively with kitchen ranges. This has now been supplemented by a handsome catalogue of 164 pages, illustrating, describing, and giving the prices of the varied apparatus now indispensable in a proper "batterie de cuisine." It is divided into two sections, the first being concerned with coal, coke, and steam heat, the second with gas and electric. The catalogue opens with several photographs of large installations by the Carron Company, such as at the L.C.C. Training College for Chefs. Next follow a number of splendid ranges, worthy of the largest hotel or restaurant, together with a few suitable for much humbler establishments. Then come roasting ranges, grilles, baking ovens, steaming ovens, hot closets and carving tables, steam-jacketed pans, water boilers, tea infusers, &c. These same adjuncts are repeated in the second section. It may be fearlessly said that for over a century and a half "Carron" ranges have been recognised as the standard. Their latest catalogue shows the firm to be among the greatest aristocrats of their trade; but it must not be forgotten that they cater for the small builder as well as for the hotel syndicate and millionaire householder.

CLARIDGE'S PATENT ASPHALTE CO., LTD., 21 Surrey Street, Victoria Embankment, W.C., have sent us a copy of an illustrated pamphlet on the uses and fireproof properties of their material. Since 1838 Claridge's asphalt has been increasingly employed for roofs, floors, damp courses, reservoir linings, &c. A warning is given that, to prevent the substitution of inferior materials, the name of the company is impressed on the two opposite sides of each block. It is recommended that the workmen of the company should be specified to lay the asphalt. The pamphlet includes a useful alphabetical list of various classes of work and the thickness of asphalt recommended for them. Particular stress is laid on the long list of breweries in all parts of the country where the company have executed the flooring.

"VELOGRAPHY," as most of our readers are doubtless fully aware, is the name given by Messrs. Norton & Gregory, Ltd., to their method of reproduction. From their premises in Castle Lane, Westminster, there has come to us a suggestive booklet entitled "The Advance of Velography." It is claimed that "Velography" copies are equal in every respect to original drawings as there is no thickening or blurring of the lines, which are of a permanent deep black, and they are absolutely to scale, being untouched by liquid. A very marked feature is the speed with which orders can be executed. Fifty or even more "Velography" facsimile copies of one Double Elephant tracing can be obtained in less than an hour. There is practically no limit to the choice of material on which the copies may be made, and they may be printed in any desired colour. The copies can be made direct from inked drawings, if necessary. Messrs. Norton & Gregory make a speciality of getting up finished tracings for competition work from rough pencil drawings. Tracings received by post are returned with copies the same day. The booklet contains all the necessary information

THE ARCHITECTURAL ASSOCIATION EXCURSION, 1912.



PLAISH 1912 C.E.B.



WILDERHOPE. 1912 C.E.B.

Sketches by Mr. C. E. BATEMAN, F.R.I.B.A.

about this successful process to enable a customer to do his share towards obtaining the best results and receiving the utmost satisfaction. It concludes with a brief account of the firm's large drawing office and mounting department. Copies will be sent on application.

THE Govan District Lunacy Board have accepted an offer of £3,883 for the installation of electric lighting at Hawkhead Asylum.

THE Boston Town Council have accepted the tender of Messrs. Goddard, Massey & Warner, Ltd., of Nottingham, for the erection of the new town bridge. There were eight tenders, and the one accepted was for £5,612 11s. 6d.

MESSRS. W. FIRTH, LTD., iron and steel merchants, of Leeds, have bought a site in the neighbourhood of Balby Road and Silvester Avenue, Doncaster, alongside the Great Northern Railway, upon which they propose to erect extensive works for the manufacture of steel girders.

THE Tipton District Council have accepted the following tenders for the proposed improvements and extensions of the gasworks, amounting to £10,874:—Mr G. E. Proberts, Bilston, £499, for the boiler-house; Messrs. R. J. Dempster, Manchester, £440 for the scrubber and £235 for the engine and exhaustor; and West's Gas Improvement Co., Manchester, £9,700 for the vertical retorts. It was decided at the same meeting to accept the tender of Messrs. Thompson & Farley, Kidderminster, of £5,696 for works in connection with the sewage disposal scheme.

MR. KINCAID, the manager of the Kirkcaldy Corporation Gas Works, has prepared a scheme estimated to cost £48,000 for the extension of the works, due to the want of storage facilities for coke and defects in the plant of the present works. The scheme includes the erection of a 1,000,000 cubic feet per day retort-house, new coal stores capable of storing 2,000 tons of coal, besides a considerable space for storing in the open. In the cost is included additional water-cooled condensers, 1,500,000 cubic feet capacity, and a washer of 1,500,000 cubic feet per day capacity.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BERKSHIRE.

Wantage.—Wesleyan School: alterations (£500).

CHESHIRE.

Birkenhead.—Town Hall, Wallasey (£110,000).

Ellesmere Port.—Cemetery Chapel. Mr. J. M. Hudson, Council surveyor.

The Dock Hotel (£850). Mr. H. Beswick, F.R.I.B.A. (of Chester), County architect.

Macclesfield.—Technical School: extensions (£4,000).

CUMBERLAND.

Gilcrux.—Farm buildings, The Oaks: alterations. Mr. J. Henney (of Maryport), architect.

Maryport.—Branch shop, Grasslot: alterations. Messrs. W. G. Scott & Co. (of Workington), architects.

DEVON.

Burnstaple.—No. 6 Litchdon Street: additions for Mr. G. French. Messrs. Oliver & Son, architects; also Showroom, Taw Vale Parade, for Mr. N. J. Codde. Highfield House, Sunny Bank, for Mr. Symons. Mr. J. C. Southcombe, P.A.S.I., architect; also Motor Works, Vicarage Lawn, for Messrs. Prideaux & Son.

Brixham.—County Elementary School for 160 places. County architect.

DURHAM.

Ferryhill.—Station Workmen's Club, Front Street: alterations.

ESSEX.

Brentwood.—Post Office enlargement. H.M. Office of Works.

Stratford.—Council Offices, The Grove: extension (£1,000).

Public Baths, Silvertown (£12,400).

Witham.—The "Bell" Inn: conversion into two cottages.

HAMPSHIRE.

Romsey.—Building in Cherville Street, for Messrs. W. Roles & Sons.

Mortuary at the Nursing Home and Cottage Hospital. Mr. J. Jenvey, architect.

HERTFORDSHIRE.

Barnet.—Twenty-two cottages, Totteridge Lane. Mr. W. F. Wilkins, County surveyor.

KENT.

Dartford.—Workhouse, West Hill: alterations. Messrs. Tait & Hobbs, architects.

Maidstone.—Ophthalmic hospital, Church Street: additions.

House, Tonbridge Road, for Mr. T. G. Large.

House, Vinters Road, for Mr. G. Haynes.

Printing Works, &c., Barker Road and Hart Street, for Messrs. G. Foster, Clark & Co., Ltd.

Workshops at No. 52 Week Street, for Messrs. Jacobs & Sons.

LANCASHIRE.

Bolton.—Premises, Old Hall Street: additions and alterations for Messrs. Adamson & Barlow.

Workhouse: Casual wards alterations.

Lytham.—Drill Hall, Henry Street, for the Territorials.

Manchester.—Baths and Washhouses, St. John's (£5,000).

LINCOLNSHIRE.

Bourne.—Council houses.

Haconby.—Workmen's cottages.

Lincoln.—Public Library. Mr. R. Blomfield, A.R.A. (of London), architect.

NORTHAMPTONSHIRE.

Daventry.—Public Elementary School. Messrs. Talbot Brown & Fisher, F.R.I.B.A. (of Wellingborough), architects.

East Haddon.—Village Hall.

Kettering.—Workhouse: Day Room. Messrs. Blackwell & Riddey, architects.

Northampton.—Extensions, Clare Street, for the Pioneer Co-operative Boot Works.

NORTHUMBERLAND.

Newcastle-upon-Tyne.—Public Elementary School, Rye Hill, for 1,200 places.

NOTTINGHAMSHIRE.

Basford.—Workhouse: Offices and children's and nurses' homes.

Warsop.—Council School.

SOMERSET.

Minehead.—Post Office. Messrs. J. Burgess & Sons, contractors.

STAFFORDSHIRE.

Cheadle.—Picture Palace.

Wolverhampton.—Bank premises, Queen Square and Exchange Street corner: re-building.

SURREY.

Farnham.—Cottages at the Bourne.

Six cottages for Miss Chrystie (£1,000). Mr. P. Caesar, architect.

Guildford.—Government Offices, Haydon Place.

Stoughton.—The "Royal" Hotel: alterations for the Farnham United Breweries, Ltd.

Woking.—Council School, St. John's.

WARWICKSHIRE.

Atherstone.—Council houses (£3,000).

Bedworth.—Twelve houses, Wootton Street, for Mr. G. Jacques.

Birmingham.—Special Council School, Bristol Street. Education architect.

WORCESTERSHIRE.

Broadway.—Council School for 270 places.

Catshill.—Council Schools. Mr. A. V. Rowe (of Worcester), architect.

Dudley.—Eye Infirmary and surgical out-patients' department.

Evesham.—Council Infants' School. Messrs. Espley & Co., contractors (£1,990).

Redditch.—Cookery and Handicrafts' Centre.

Stoke Works.—Council School.

YORKSHIRE.

Bridlington.—Temperance Hall, Quay Road.

Cottingham.—Parish Hall. Mr. A. C. Blackmore (of Hull), architect.

Devsbury.—Girls' Grammar School for 200 places.

Golcar.—House, Arthur Street. Mr. A. Shaw, architect.

Hebden Bridge.—Butcher's shop, Old Lees Road, for the Industrial Co-operative Society.

Warehouse and Workshop, King Street, for Mr. D. Walton.

Heptonstall.—Council School: head-teacher's house: alterations.

Leeds.—Guardians' Offices, Bedford Street, East Parade: alterations. Mr. G. F. Bowman, architect.

Norton.—Two houses, Welham Road, for Sir J. D. Legard. Picture Hall, Welham Road.

Rotherham.—Council Schools, St. Ann's Road: alterations and extensions.

WALES.

Abercwmboi.—Workmen's Hall, &c. Mr. A. S. Cameron (of Aberdare), architect.

Denbigh.—House and shop, Love Lane: additions for Mr. H. D. Roberts. Mr. J. D. Lewis, architect.

Llandudno.—North Western Hotel, Vaughan Street: additions for Mr. T. Byrne.

House, West Parade, for Mr. A. W. Sims.

House, Trinity Street, for Lord Mostyn and others.

Stables, Back Abbey Road: alterations for Lady Hughes Hunter.

Llanelly.—Steelworks: extensions for Messrs. Richard Thomas & Co., Ltd.

Llanfair Caereinion.—London, Counties and Midland Bank new premises, Market Square. Mr. P. Edwards (of Doderston, Chester), contractor.

Loughor.—Steelworks for the Bynea Steel Company.

Pwllheli.—South Beach C.M. Chapel: extensions. Mr. R. Ll. Jones (of Carnarvon), architect.

Swansea.—Cwmfelin Steel and Tinplate Works: enlargement (£100,000).

SCOTLAND.

Govan.—Apley Villa, Merryland Street: additions and alterations for the Scottish Nurses' Training Home.

Greenock.—Four cottages, Border Street, for Mr. A. Houston.

Nine cottages, Robertson and South Streets corner, for Mr. D. L. Carmichael.

Inverurie.—Auction Mart extension. Mr. G. Moir (of Methlick), architect.

Kingussie.—Public Hall.

Newtonmore.—Public Hall (£1,000).

IRELAND.

Cookstown.—School for 120 places. Mr. J. Todd, architect.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 6,980. March 21, 1912.—Improvements in or connected with interlocking concrete slabs or blocks for use in building concrete walls, sheet piling, groins and other structures. R. H. Neal, A.M.I.C.E., M.I.M.E., 4 Mortimer Road, West Ealing. This invention relates to interlocking concrete slabs or blocks of the kind for use in making or building up partitions, walls, groins, breakwaters, dams and other structures. Reinforced concrete slabs are formed with over-lapping or interlocking lugs, which may have a tongue and groove connection with the adjacent slab and which also

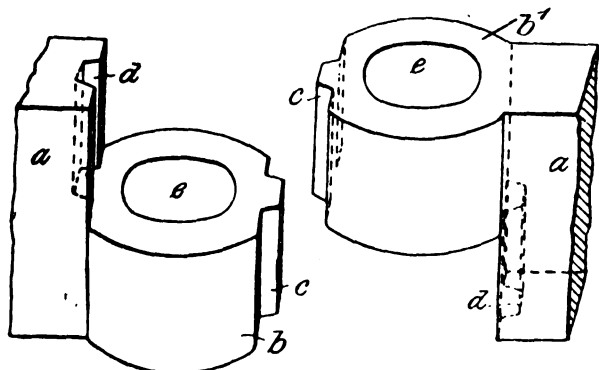
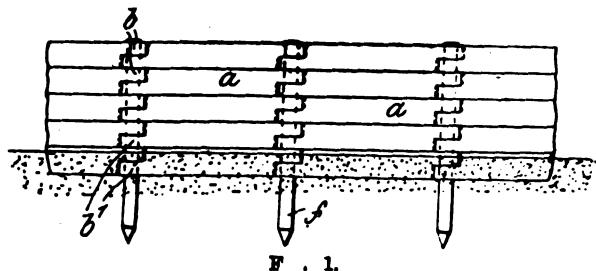


Fig. 2.

have perforations there through, so that when a number of such slabs are assembled they may be securely locked together by means of reinforced concrete piles driven into or secured in the ground and passing through perforated lugs. Fig. 2 shows in perspective the adjacent or interlocking ends of two slabs or blocks. Fig. 1 is an elevation of a wall. The slabs or blocks, *a*, are each formed with alternate overlapping ends, *b*, *b¹*, and it is preferred that such ends are provided with ribs or projections, *c*, which engage within the grooves or recesses, *d*, and interlock the slabs when in position. The overlapping ends, *b*, *b¹*, of the slabs are formed with perforations, or eyes, *e*, by means of which they may be assembled and interlocked on reinforced piles, pillars, columns, or posts, *f*. The piles, *f*, may also be of reinforced concrete and of any suitable cross-section. July 31, 1912.

PATENT SPECIFICATIONS PUBLISHED
AUGUST 29, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

- No. 16,220. July 13, 1911.—P. E. Whyte, 11 Croxeth Grove, Liverpool. Taps or valves.
17,742. Aug. 4, 1911.—A. D. Le Croissette, 23 Greenhill Road, Harlesden, N.W. Draught excluding doors.
17,757. Aug. 4, 1911.—J. H. Faulkner, 31 Langland Gardens, Hampstead, N.W. Door fasteners.
17,802. Aug. 4, 1911.—C. H. Martini, 13 Inselstr., Leipzig, Germany. Regulating the temperature of rooms heated by central heating plants.
18,041. Aug. 9, 1911.—William Powell, 718 Salisbury House, London Wall, E.C. Seasoning or hardening of timber.
18,136. Aug. 10, 1911.—Giuseppe Campana, 2 Via Tommaso Grossi, Milan. Ventilators.
18,308. Aug. 12, 1911.—Adolph Schror, 102a Albany Street, Regent's Park, and John Raschen, 44 Beresford Road, Oxton, Cheshire. Anti-corrosive or protective paint for metallic surfaces.

18,384. Aug. 14, 1911.—William Calway, 40 Archfield Road, Bristol. Building of concrete, cement, and like walls.
19,986. Sept. 8, 1911.—James Henderson, 105 Church Street, Broughty Ferry, near Dundee. Ball cocks for cisterns and water taps.

21,010. Sept. 22, 1911.—R. P. Doudney, Clarendon Villa, Wantage, Berks. Carburetting apparatus.

22,955. Oct. 18, 1911.—Frank & F. P. Candy, 5 Westminster Palace Gardens, S.W. Filters.

22,048. Oct. 18, 1911.—F. H. Dorrington, 23 High Street, Brentwood, and A. J. Rippin, 22 High Street, Brentwood. Ball and float valves.

23,537. Oct. 25, 1911.—J. T. Johnson, 37 Great Ancoats Street, Manchester. Tile ashguards, curbs, or fenders for fireplaces.

24,089. Oct. 31, 1911.—A. R. Abrey, 4 Southbridge Place, Croydon. Water taps and valves.

24,263. Nov. 1, 1911.—Merkham Trading Co., Ltd., W. F. Freeman, and Harry Walker, 8 Bath Street, City Road, E.C. Shelving for displaying goods.

27,285. Dec. 5, 1911.—Adam Carpenter, 1201 Hall Street, Elmira, Chemung, N.Y. A combined cooker and heater.

333. Jan. 4, 1912.—J. T. Davis, San Francisco, County of San Francisco, California, U.S. Briquette press.

1,548. Jan. 19, 1912.—Date claimed under International Convention March 21, 1911. Josef von Vass, Reichenbachstr., Dresden. Method of and means for conveying, forcing or mixing semi-fluid mixtures such as cement, lime and the like.

2,584. Feb. 1, 1912.—J. L. Junior, 6 Robert Road, Handsworth, Birmingham. Folding lavatories.

2,687. Feb. 2, 1912.—B. Shorland, 511 Stretford Road, Old Trafford, Manchester. Handles and their fittings for doors and the like.

2,937. Feb. 5, 1912.—Peter M. Kling, 365 South Broad Street, Elizabeth Union, New Jersey, U.S. Bolts.

3,841. Feb. 15, 1912.—Thomas Ashby, Petersham Villa, Tudor Road, Hampton-on-Thames. Apparatus for cleansing sewers, drains and the like.

3,894. Feb. 16, 1912.—W. H. & J. B. Coulter, Bank Foot Foundry, York. Machines for tracing and performing similar operations upon stone, marble, granite and the like.

4,072. Feb. 17, 1912.—A. E. Wheeler & C. J. H. Ridley, 12 Theobalds Road, W.C. Systems of hot water circulation.

5,437. March 4, 1912.—Date claimed under International Convention May 15, 1911. W. D. Fleming, Miller Street, Parry Sound, Ontario, Canada. Wood polishers.

6,341. March 14, 1912.—A. F. Morrison, Hygeia Works, Cornbrook, Manchester. Box for moulding metal baths and the like.

8,055. April 3, 1912.—William Clark & J. P. Andrew, 152 Holm Street, Glasgow. Platform ladders.

9,542. April 22, 1912.—W. H. Lloyd, 4125 Perry Street, Chicago, U.S. Mounting of water closet bowls.

10,099. April 29, 1912.—Henry Creighton, 6 Reynolds Road, Old Trafford, Manchester. Regulating taps or cocks.

10,248. April 30, 1912.—Otto Shanks, 231 Great College Street, Camden Town, N.W. Taps or valves for water, steam and the like.

FIRE PROTECTION FOR NATIONAL AND
UNIVERSAL EXHIBITIONS.*

(Concluded from August 23.)

CONSTRUCTION OF BUILDINGS.

14. *Construction*.—The construction of buildings should be determined on the following lines:—

A. *Classification of Buildings*.—The buildings should be divided into four classes structurally, namely, those affording:—

1. Practically "no" fire resistance. 2. "Temporary" fire resistance. 3. "Partial" fire resistance. 4. "Full" fire resistance.

B. *Buildings for Ordinary Exhibits*.—Buildings containing replaceable exhibits, booths for the sale of goods, &c., could be of the first class, i.e. of a construction affording practically "No" fire resistance.

C. *Restaurants, Side-shows, &c.*—The buildings intended to hold the public seated for any period exceeding five minutes, such as restaurants, cinematograph shows, displays,

* Abstract of a Paper by Mr. Edwin O. Sachs, F.R.S.Ed., Chairman of the British Fire Prevention Committee, Vice-President Int. Fire Service Council, &c., presented at the International Fire Congress, St. Petersburg.

side-shows, &c., should be of the second class, i.e. affording "temporary" fire resistance.

D. *Buildings for Irreplaceable Exhibits, Offices, &c.*—The buildings intended to hold works of art and irreplaceable exhibits of an historical character, as also any tower of greater height than 80 feet, the general administrative offices, post office, telegraph or telephone office, police and fire stations should be of the third class, i.e. affording "partial" fire protection, but it is advisable that the highest class of permanent construction affording "full" fire resistance be adopted for housing exhibits of historical importance.

15. *The Ordinary Form of Construction Affording Practically "No" Fire Resistance.*—For the buildings intended to house ordinary exhibits, &c., the following principles should be adopted:—

A. *External Walls.*—The external walls of the buildings should be of a solid, slow-burning or incombustible material not less than 3 inches thick, or of metal or of both.

B. *Floors.*—The floors of the ground floor should be of close boarded rebated or metal jointed floor boards out of not less than 1-inch boarding, on suitable bearers and sleepers, the space thereunder being filled up as far as the ground floor is concerned to the underside of the boards with a dry incombustible material. For first floors the floors should be similarly constructed, but the bearers should be of a slow-burning or incombustible material, and no voids should be permissible. Where linoleum, tiling, or parquetry be used throughout the surface of a floor as a floor covering, plain jointed boarding should be permissible for the floor proper.

C. *Roofs.*—The roofs should be of metal or of some form of non-combustible roofing material throughout, except for any supporting boarding or battens which, if used, shall be out of not less than 1-inch boarding planed, thickly whitewashed, or covered with an approved fire protective paint where exposed. The framing to skylights or lantern lights shall be of metal.

D. *Wall Coverings, &c.*—No canvas or other textile covering shall be used on walls, ceiling, or roof soffits, unless closely pasted to the surface it is to cover throughout, or impregnated so as to be effective in not spreading flame (twelve months guarantee).

E. *Divisional Walls.*—Divisional walls between adjoining parts of a building should be constructed as follows:—

- (a) an independent wall.
- (b) carried up 5 feet above the roofing.
- (c) of "partial" fire-resisting construction,
- (d) having no openings larger than 500 feet super on the ground floor or larger than 250 feet on the first floor fitted with "partial" fire-resisting doors or roller shutters and no openings on any one divisional wall to be nearer to another than 80 feet centre to centre, and
- (e) having every door opening to be fitted with a drencher on each side.

F. *Partitions.*—Partition walls should be of solid slow-burning or incombustible material or hardwood not less than 2 inches thick, metal or incombustible sheets of not less than $\frac{1}{8}$ inch thick or both.

G. *Ceilings.*—Ceilings should be of slow-burning or incombustible material such as plaster boards of not less than 1 inch, incombustible sheets of not less than $\frac{1}{8}$ inch, plaster on metal lathing (the plastering not less than $\frac{1}{2}$ inch thick), or of metal or of hardwood not less than 1 inch thick.

16. *Construction Affording "Temporary," "Partial," or "Full" Protection.*—In buildings affording "temporary" protection the same conditions should prevail as customary where a minor degree of fire-resistance is required of a permanent structure. In buildings affording "partial" or "full" protection similarly the same conditions should prevail as in permanent structures of the higher grades of fire resistance.

17. *Doors and Shutters.*—For doors the following principles should prevail:—

A. *Internal Doors.*—All interior doors should swing both ways.

B. *External Doors.*—All external doors should open outwards and be self-closing.

C. *Panic Bolts.*—All doors, in portions used by the public, should be fitted with panic bolts.

D. *Plinths to Doors.*—Doors should not have projecting plinths, and where leading out on to steps should have a clear 5-foot landing before the first step downwards.

E. *Shutters.*—Where shutters are used they should be of an approved type to open easily from either side.

18. *Exhibition Stands.*—Exhibition stands in the exhibition buildings should be strictly limited in height so as to be kept to a prescribed distance from the roof soffit, ceiling of

gallery floor, &c., as the case may be. Stands comprising erection higher than 7 feet above the floor shall be subject to the same rules as the internal work of the building. All voids under exhibitors' stands or platforms should be filled up, and they should be boarded as the exhibition floors. Counters and movable show-cases could, however, be regarded as furniture.

19. *Timber in the Exhibition Halls.*—All timber used in the exhibition shall be out of not less than 1-inch boarding, planed, thickly whitewashed or painted with an approved fire protective paint (one year guarantee).

20. *Velaria, Awnings, &c.*—Velaria, awnings, shop blinds, &c., are entirely prohibited. Ordinary blinds and flags used inside the building shall be rendered non-inflammable, likewise all curtains, or draperies other than tapestry, velvets, silks, velveteens and carpets.

21. *External Exhibition Stands, Booths, &c.*—Exhibitors' own minor external buildings, booths, &c., should be limited as to height, projections; the proportion of exit facilities to floor space, &c., should be according to the local requirements and character of the exhibition.

22. *Plans of Exhibits, Stands, &c.*—The exhibitors should submit plans of their proposed stands, stalls, booths, counters, buildings, &c., to a uniform scale, and the principles laid down as to their character from a fire point of view should be strictly observed. The administration should provide the necessary administrative machinery to enable them to notify consent, conditional consent, or dissent (with reasons) within ten days of application. The conditions should be expressed in simple language. The powers of the exhibition management as to prohibition of an exhibit, right to screen it or remove it in the case of non-compliance with the rules should be precise and summary. On the other hand, a tactful consideration of individual requirements and conditions must be observed. No stand should, however, be visible to the public until the conditions have been complied with and an approval ticket has been issued to that effect. Galvanised iron screens on casters 7 feet high and suitably inscribed should be available for screening any stand not complying with the conditions, and shall be chargeable at a rate per diem.

23. *Fire Protective Paint, &c.*—Provision should be made for exhibitors to be able to obtain fire protective or non-inflammable paints, the impregnation of textiles, &c., at a tariff not exceeding by 10 per cent. the actual net cost, and a ready and practical means of testing and controlling the materials and work done either at or outside the exhibition should be arranged for, as also a regular inspection of the materials and work as applied to the actual exhibit.

VARIETIES.

MR. JAMES SALLOW, of Dunston, retired builder, who died on July 1 last, aged fifty-eight years, left estate of the gross value of £13,991 6s. 4d., of which the net personalty has been sworn at £78 14s. 11d.

THE plumbers of Dumfries and Maxwelltown have received an increase in the rate of wages of $\frac{1}{2}$ d. per hour, making the standard rate of wages 8d. per hour.

THE question of the provision of small dwellings for the working classes has reached an acute stage in Christiania. According to an American Consular report, the stringent building laws make it almost impossible to secure tenements of one to three rooms and a kitchen. The city is now willing to guarantee mortgages amounting to 75 per cent. of the construction costs to further the building of tenements for workmen, but even these arrangements have not provided sufficient lodgings, and it has been necessary to build wooden barracks to meet the immediate needs.

WE regret to announce the death of Mr. J. H. Burgess, which took place at Manchester on August 27, at the age of sixty-five years. Mr. Burgess was associated practically all his life with Messrs. J. & H. Patteson, marble, granite, and mosaic workers, Oxford Road, Manchester. Entering their employment when quite a youth, he continued with the firm for over forty years, eventually being appointed general manager. A few years ago, in conjunction with Mr. J. E. Mills, he purchased the business as a going concern, and was actively connected with it until shortly before his death. In the marble world Mr. Burgess was well known throughout the United Kingdom and the Continent, frequently visiting and inspecting the most important marble quarries and works to acquire information first-hand, and having during his lifetime's experience with marble and marble working carried out large contracts in many of our notable buildings. The interment took place at the Southern Cemetery, Manchester, on the 29th ult.

THE Architect and Contract Reporter.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 11.)

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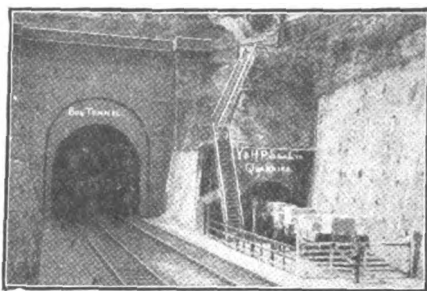
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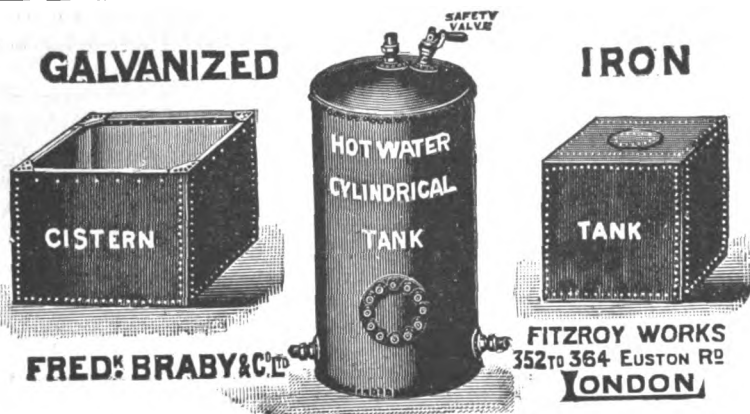
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DONCASTER.—The committee of the Yorkshire Institution for the Deaf invite plans for erection of five classrooms, residence for thirty children and staff, and also for a swimming bath. A premium of £50, to be merged in the commission, will be paid to the author of the accepted plans. Mr. B. D. Crouch, secretary, 6 Hall Gate, Doncaster.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ASPATRIA.—Sept. 17.—For the various works required in erection of a drill hall, &c., at Aspatria, for the 5th Battalion the Border Regiment. Send names and addresses by Sept. 17 to Messrs. W. G. Scott & Co., architects and surveyors, 2 Park Lane, Workington.

AXBRIDGE.—Sept. 19.—For constructing new latrine building on the men's quarters of the workhouse. The Board Room, Workhouse, Axbridge.

BARKISLAND.—Sept. 17.—For erection of scullery house, including mason's, joiner's, slater's, plasterer's, and painter's work, for the Overseers of Barkisland. Mr. T. Hutton, surveyor, Barkisland, Yorkshire.

BEXHILL-ON-SEA.—Sept. 21.—For the reinstatement of the wall to the gardens, and storm-water duct—the whole to be in concrete, supported by six mild steel stanchions—for the proprietors of the Kursaal. Deposit 10s. 6d. Mr. L. Burn, A.M.I.N.E., consulting engineer, 6 Holborn Viaduct, London, E.C.

BOLTON-ON-DEARNE.—Sept. 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Bolton-on-Deerne Highgate new school—viz., builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Mexborough. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

BRISLINGTON.—Sept. 25.—For erection of an infants' Council school at Brislington, for the Somerset County Council. Mr. A. G. Skilling, Homeside, Brislington, or Mr. A. J. Pictor, A.R.I.B.A., Bruton.

BURLEY.—Sept. 26.—For erection of an additional classroom for 50 children and storeroom, alterations to cloakroom, and regrading, gravelling, and tar-paving playground at Burley Council school, for the Hampshire County Council. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

COLD NORTON.—Oct. 11.—For erection of a public elementary school for 80 children, for the Essex Education Committee (Maldon District Sub-Committee). Send names and £2 2s. deposit by Sept. 18 to Mr. F. H. Bright, clerk to the sub-committee, 53 High Street, Maldon. The County Architect, 73 Duke Street, Chelmsford.

CONISTON COLD.—Sept. 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Coniston Cold Council school alterations and repairs—viz., builder, joiner, and plumber. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

DOVER.—Sept. 25.—For erection of Dover new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Dover Post Office and H.M. Office of Works, Storey's Gate, London, S.W.

DURHAM.—Sept. 17.—The County Council invite sole tenders for new Council School at Waldrige Lane (for about 450 scholars); alterations and additions at Birtley George Street and Wingate Council Schools; and erection of caretakers' houses at Horden Colliery Council School. Apply (1) for Waldrige Lane, Birtley George Street, and Horden caretaker's houses (plans, specifications, and conditions only for Horden), at the office of Mr. W. Rushworth, Shire Hall, Durham; (2) for alterations at Wingate, at the office of Mr. N. Richley, Shire Hall, Durham.

ERPINGHAM.—Sept. 17.—For the erection of bridges and culverts, for the Erpingham Rural District Council. Messrs. A. F. Scott & Son, 24 Castle Meadow, Norwich, and 12 Holborn Hall, London, W.C.

HALIFAX.—Sept. 17.—For execution of the work (various trades) required in the erection of a tramway shelter at Bradshaw. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

HULL.—Sept. 18.—For the builder's and ferro-concrete work required in the construction of electricity sub-station at St. Andrew's Dock. Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

HULL.—Sept. 19.—For the necessary work to be performed in the erection of a fishermen's school in Boulevard, for the Education Committee. Deposit £2 2s. Mr. J. H. Hirst, city architect, Guildhall, Hull.

IRELAND.—Sept. 24.—For additions to Union Hall National School, Leap, Co. Cork. The District Office of Public Works, Cork.

IRELAND.—Sept. 24.—For erection of a Crown post office at Tuam, Co. Galway. Deposit £1. The Office of Public Works, Dublin, and the Post Office, Galway.

IRELAND.—Sept. 25.—For the erection and furnishing of National School buildings at Derrinkehir, Ballinamore, Co. Leitrim. Royal Irish Constabulary Barracks, Ballinamore.

KENILWORTH.—Sept. 19.—For erection of lodge, chapel, &c., in connection with proposed cemetery, for the Urban District Council. Deposit £3 3s. Mr. S. Douglas, C.E., architect and surveyor, Council Offices, Kenilworth.

LEEDS.—Oct. 7.—For the supply and erection of a steel and corrugated iron building, and the necessary surface-water drainage of the same, at the permanent way depot, Sovereign Street, for the Tramways Committee. Send applications by Sept. 30 to Mr. J. B. Hamilton, general manager, Leeds.

LEEDS.—Sept. 16.—For the bricklayers' and masons', carpenters' and joiners', plumbers', plasterers', slaters' and painters' work required in the alterations and additions to the imbecile wards at the union infirmary, Beckett Street. Separate tenders are required for each class of work. Mr. J. Mitchell Bottomley, architect, 2 Basinghall Square, Leeds.

LITTLE HULTON (LANCS.).—Sept. 17.—For the conversion of two old shops into cottages, 470-472 Manchester Road East. The Committee of the Little Hulton Industrial Co-operative Society, Ltd.

LONDON.—Sept. 19.—For general repairs, painting, and lead roof works at the public baths, Kennington Road, S.E., for the Lambeth Borough Council. Mr. H. Edwards, C.E., borough engineer.

LONDON.—Sept. 20.—For the conversion of their schools in Newcomen Street, Borough, into a domestic economy centre, for the Governors of the Newcomen Foundation. Deposit £5. Mr. L. M. Langston, clerk, 1, 2, 3 and 30 The Exchange, Southwark Street, S.E.

LONDON.—Sept. 23.—For erection of a residence for the medical superintendent and four workmen's cottages on the grounds adjoining their isolation hospital, World's End, Winchmore Hill, N., for the Enfield and Edmonton Joint Hospital Board. Mr. R. Collins, Public Offices, Enfield.

LONDON.—Sept. 25.—For constructing verandahs and for alterations to fire-escape staircases at the Brook Fever Hospital, Shooter's Hill, Woolwich, S.E., for the Metropolitan Asylums Board. Deposit £1 1s. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, London, E.C.

LOUGHBOROUGH.—For the following structural alterations and fittings at the Technical Institute: (1) laying wood floor and fixing skylight to room in old library; (2) supply and fixing sink and accessories; (3) supply of six deal tables; (4) additions to heating (hot water) supply. The Principal, Technical Institute, Loughborough, Leic.

MANCHESTER.—Sept. 18.—For laying wood block floors in the sick ward of the male imbecile block at the workhouse at Crumpsall. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

MEXBOROUGH AND MOORTHORPE.—Sept. 17.—The West Riding Standing Joint Committee invite whole tenders for the following works: New parade room at Mexborough police station, ditto Moorthorpe police station. Mr. J. V. Edwards, county architect, County Hall, Wakefield.

MICHELMERSH.—Sept. 24.—For erection of a corrugated iron cookery room at Michelmersh Council school, for the Hampshire County Council. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

MONMOUTH.—Sept. 18.—For concreting the floors of two dining sheds and a guard hut belonging to the Royal Monmouthshire Royal Engineers (Special Reserve), in a field about a mile and a half from Troy Station, Monmouth. The Officer Commanding Royal Monmouthshire Royal Engineers (S.R.), The Castle, Monmouth.

NELSON.—Sept. 28.—For the construction of a brick skew arch bridge with stone facings over the river in Carr Hall Road, for the Corporation. Deposit £2 2s. Mr. W. Shackleton, A.M.I.C.E., borough engineer and surveyor, Town Hall, Nelson.

NORWICH.—Sept. 18.—For erection of children's receiving homes, superintendent's home, and stores on Hotblack Road, for the Guardians. Deposit £1 1s. Messrs. Morgan & Buckingham, architects and surveyors, 1 Upper King Street, Norwich.

PORTSMOUTH.—Sept. 16.—For rebuilding offices and other work at the Fratton Street Council school, for the Education Committee. Mr. A. H. Bone, surveyor, Cambridge Junction, Portsmouth.

REDCAR.—Oct. 2.—The North Riding of Yorkshire County Council Education Committee invite full tenders for erection of a cookery and manual instruction room at West Dyke Council school. Mr. Mennell, Cleveland District Education Office, Redcar.

ROCHE.—Sept. 21.—For certain alterations for the adaptation of the Temperance Hotel, Roche, Cornwall, for the purposes of a working-men's institute. Mr. B. C. Andrew, M.S.A., architect, Biddick's Court, St. Austell.

ROCHFORD.—Sept. 14.—For the work of alterations and additions to the female wards at the workhouse infirmary at Rochford, Essex. Send in names and addresses to the architect, Mr. W. J. Wood, 26 Alexandra Street, Southend-on-Sea.

ST. AUSTELL.—Sept. 21.—For erection of a new residence, South Street. Mr. B. C. Andrew, M.S.A., architect, Biddick's Court, St. Austell.

SCOTLAND.—Sept. 16.—For the concrete, joiner, slater, plasterer, plumber, and painter works of additions to Fog-watt Hall. Mr. McGillivray, printer, South Street, Elgin.

SCOTLAND.—Sept. 16.—For the mason, carpenter, slater, plumber, plaster, and painter works of new room to be

erected for manual work and physics, and refitting of shelter at the West End school, Elgin. Mr. J. Wittet, architect, Elgin.

SCOTLAND.—Sept. 16.—For erection of hoardings, demolition of existing premises, and excavation of foundations, &c., on the site of the Dundee new labour exchange, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work, and not for separate trades. H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Sept. 17.—For erection of new Letter and Parcel Sorting Office, Perth. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. The Head Post Office, Perth, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Sept. 17.—For erection of a labour exchange at Lauriston Place, Edinburgh. Tenders are required for the whole work and not for separate trades. Deposit £1 1s. His Majesty's Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Sept. 19.—For mason, carpenter, and slater work of additions and alterations to farm buildings at Easter Drumatherty, Delvine, Murthly. Mr. Dow, Estate Office, The Aird, Delvine.

SCOTLAND.—Sept. 26.—For the second portion of the laboratory buildings at the Royal Botanic Gardens, Edinburgh, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. H.M. Office of Works, 3 Parliament Square, Edinburgh.

SALFORD.—Sept. 25.—For alterations and additions to the town hall, police department, and sessions court, for the Corporation. Deposit £2 2s. Mr. J. B. Broadbent, A.R.I.B.A., 15 Cooper Street, Manchester.

WALES.—For extensive alterations to the Volunteers Inn, High Street, Merthyr, for Messrs. D. Williams & Co., Taff Vale Brewery. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr.

WALES.—Sept. 16.—For erection of 31 houses, for the South End Building Club, in continuation of Arthur Street, Tredegar. Mr. A. F. Webb, M.S.A., architect and surveyor, Blackwood.

WALES.—Sept. 18.—For erection of 25 or more houses at Tynnant, Llantwit Vardre, for the Tynnant Property Club. Messrs. Gibson, Parry Williams & Co., architects and surveyors, Pontypridd.

WALES.—Sept. 20.—For carrying out the following works: (1) Extensions and alterations at the Blaenllechau infants' Council school (deposit £1 1s.); (2) alterations at the boys' and girls' departments of the Cwmclydach Council school (deposit £1 1s.); (3) repairing and laying cement concrete at the Dinas boys' school playground (deposit 10s. 6d.); (4) repairing and asphaltting playgrounds at the boys' and girls' departments of the Williamstown Council school (deposit 10s. 6d.), for the Rhondda Urban District Council. Mr. J. Rees, architect, Hillside Cottage, Pentre.

WALES.—Sept. 24.—For the pulling down and reconstruction of the Star Hotel, Ystrad, Rhondda. Send names and £2 2s. deposit by Sept. 16 to Mr. T. E. Richards, A.R.I.B.A., architect and surveyor, Pontypridd and Cardiff.

WALES.—Oct. 2.—For erection of four houses at Cwm-rhydyceirw, near Morriston, Glamorganshire, for the Great Western Railway Co. The Engineer at Neath Station.

WARRINGTON.—Sept. 19.—For the supply and fixing of stone steps and iron railing for Howley footbridge, for the Bridges Committee. The Borough Surveyor's Office, Warrington.

WEST HARTLEPOOL.—Sept. 19.—For the building of a power station and for the foundations for cooling tower ponds at the works of the Seaton Carew Iron Co., for the Corporation. Deposit £1 1s. Mr. H. F. Friedrichs, M.I.C.E., borough electrical engineer, Burn Road, West Hartlepool.

WHITEHAVEN.—Sept. 16.—For building a boiler house, boiler seatings and flues, chimney and chimney foundations, for alterations to existing buildings for calorifier house, &c., forming concrete channels, building new ironing room, and making alterations to existing ironing room for disinfectant house, building partitions, providing new concrete floors, drainage, and other works connected therewith, at the workhouse, Low Road. Messrs. Beswick & Davis, civil engineers and architects, 18 Church Street, Whitehaven.

YORK.—Sept. 17.—For erection of an engine shed at York, for the North-Eastern Railway Co. Mr. William Bell, the Company's architect, at York.

TENDERS.

BUILTH WELLS.

For building a fire station, &c., in the Smithfield. Mr. T. SMITH, M.S.A., architect and surveyor, Builth Wells.

Concrete blocks.

T. H. Jones	£280	0	0
J. M. Jones & Sons	250	0	0
Meredith	223	0	0
S. SPEAKE (accepted)	213	10	3

Llanelwedd stone.

Jones	£285	0	0
Jones & Sons	250	0	0
Meredith	229	0	0
Speake	208	8	0

All of Builth Wells.

CARGO FLEET.

For (1) erection of school to accommodate 430 children, and (2) alterations to the existing Lawson Schools, for the North Riding of Yorkshire Education Committee. Mr. W. E. HASLOCK, architect, Middlesbrough.

Vinter & Davidson	£6,250	0	0
Metcalfe	6,143	15	0
King & Sons	6,061	8	9
Doughty & Sons	6,043	2	0
Radge	5,993	17	3
Coates	5,789	12	7
Pearson	5,603	0	0
Porteous	5,564	12	0
H. McNAUGHTON, Middlesbrough (accepted)	5,424	14	0

CHELMSFORD.

For extension of fire station in Market Road. Mr. PERCIVAL T. HARRISON, A.M.I.C.E., architect, borough engineer and surveyor.

Bailey	£221	0	0
Johnson & Hawkes	219	0	0
Eglin & Co.	210	10	0
Fairecloth	193	5	6

All of Chelmsford.

COCKERMOUTH.

For works of sewerage and sewage disposal at Great Clifton, for the Cocker-mouth Rural District Council. Mr. J. B. WILSON, A.M.I.C.E., engineer, Cocker-mouth.

Accepted tenders.

Contract No. 1A.

Ham, Baker & Co., London	£165	6	6
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Contract No. 1B.

Ham, Baker & Co., London	£174	11	2
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Contract No. 1C.

Parker & Co., Workington	£50	12	6
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Contract No. 2.

Flimby and Broughton Moor Coal and Firebrick Co.	£344	11	9
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EXETER.

For the erection of children's homes, for the Guardians. Mr. R. M. CHALLICE, architect, Exeter. Quantities by Mr. R. M. CHALLICE, Exeter.

Brealy	£7,219	0	0
Stevens	6,900	0	0
Setter & Son	6,860	0	0
Coles	6,729	0	0
Herbert	6,698	0	0
Stephens & Son	6,690	0	0
Wescott, Austin & White	6,599	0	0
Ham & Passmore	6,594	0	0
Lea	6,499	13	4
Narracott	6,452	3	6
SOPER & AYRES, Exeter (accepted)	6,359	7	6

HYDE.

For erection of a public hall, police courts, offices, and other works in Corporation Street, Water Street, and Greenfield Street, for the Corporation. Mr. J. DIGGLE, A.M.I.C.E., borough surveyor, Hyde, Cheshire.

G. Roberts, Ltd.	£16,998	0	0
Carlyle	15,997	0	0
Normanton & Son	15,379	0	0
Marshall & Sons	14,925	0	0
Gerrards & Son	14,490	0	0
Redyard	14,449	0	0
ROBINSON & SONS, Hyde (accepted)	14,175	0	0

LEICESTER.

For the supply and erection of steel roof trusses, lattice girders, and columns required for an extension of the main tramcar depot, Abbey Park Road.

Eastwood, Swinger & Co.	£1,083	16	5
Cross & Co.	888	19	10
E. C. & J. Keay	794	6	8
Goddard, Massey & Warner	778	14	3
Cockey & Sons	769	17	3
Gimson & Co.	766	15	0
Mundy	722	7	4
Robinson & Kershaw	689	0	0
Russell & Sons	678	10	0

LITTLEHAMPTON.

For erection of a sea wall at "Millfield," Rustington, for the Metropolitan Asylums Board. Mr. H. HOWARD, F.S.I., surveyor, Littlehampton.

Wall	£850	0	0
Kirk & Randall	679	15	0
T. Bennett (Herts Contract Co.)	620	0	0
Osenton	571	0	0
Robinson	546	19	0
Somerville & Co.	520	0	0
Hill	495	2	0
King	409	0	0
Burrell & Standen	396	0	0
Summers Bros.	375	15	0
Linfield & Sons	375	0	0
Snewin Bros., Littlehampton (recommended)	374	0	0
Somerville & Co.	345	0	0
Surveyor's estimate	375	0	0

LONDON.

For the construction of cells at King's Cross Road Police Station. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor to the Metropolitan Police, New Scotland Yard, S.W.

Newby & Bros.	£5,326	0	0
Downs	5,273	0	0
Jarvis & Sons	5,166	0	0
Smith & Co.	4,928	0	0
Killby & Gayford	4,908	0	0
Holland & Hannen	4,881	0	0
Coxhead	4,821	0	0
Lole & Co.	4,816	0	0
Grover & Son	4,683	0	0
Higgs & Hill	4,554	0	0
Eyre	4,540	0	0

LOWESTOFT.

For alterations and additions to the Nurses' Home.

Croft	£390	0	0
Rose	369	0	0
Leighton	348	17	6
Wales	339	10	0
Hindes & Co.	330	0	0
Warnes	320	0	0
Sewell	297	0	0
Ashby	292	0	0
Beckett & Son	290	0	0
Barham & Swan	288	0	0

MACCLESFIELD.

For alterations to the receiving and vagrant wards.

SIMPSON BROS. (accepted)	£250	10	0
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There were five tenders.

MORPETH.

For the erection of thirty-three workmen's dwellings, for the Town Council.

G. DOUGLAS, Newcastle (accepted)	£5,855	0	0
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There were nine tenders.

SOUTHAMPTON.

For rebuilding Nos. 7, 8, and 9, and the reinstatement of No. 11 Bridge Street, Southampton, for Messrs. E. Hart & Co. Mr. WILLIAM BURROUGH HILL, F.S.I., architect and surveyor, Southampton.

Fussell	£2,809	13	8
Playfair & Toole	2,730	0	0
Dyer & Sons	2,710	0	0
Cawte	2,700	0	0
Kimber	2,598	0	0
Doggrell & Son	2,598	0	0
Osman & Co.	2,585	0	0
Jenkins & Sons	2,578	0	0
Wright & Son	2,565	0	0
Stevens & Co.	2,435	0	0
Colbourne	2,359	0	0
Jupe, Bitterne Park (recommended)	2,353	0	0

NORTHWICH.

For the erection of baths.

T. ASTLES, Northwich (*accepted*) . . . £7,850 0 0
There were seven tenders.**SALISBURY.**

For the renovation of the Municipal Buildings. Mr. W. J. GOODWIN, A.M.I.C.E., city engineer and surveyor, Salisbury.

Green . . . £219 11 0
STICKLAND & Co. (*accepted*) . . . 204 10 3**STAFFORD.**

For the erection of a free library at the junction of Lichfield Road and Bailey Street. Messrs. BRIGGS, WOLSTENHOLME & THORNELY, architects, Liverpool.

ESPLEY & SONS, Stafford (*accepted*) . . . £4,652 8 5
There were sixteen tenders.**WALES.**

For building stores at Llandilo, for the Farmers' Co-operative Society, Ltd. Messrs. G. MORGAN & J. H. MORGAN, F.R.I.B.A., architects, Carmarthen.

Howell & Son . . . £1,699 0 0
Daniels & Rees . . . 1,548 0 0
Rees Davies . . . 1,519 0 0
THOMAS & Co., Llandilo (*accepted*) . . . 1,398 10 0**ELECTRIC LIGHTING—A YEAR'S PROGRESS.**

A LITTLE over a year ago the announcement was made of an invention which promised to revolutionise electric lamp making. The process of drawing the metal tungsten, hitherto regarded as a brittle and non-ductile substance, into lamp filaments as strong as steel had just been made a commercial possibility. The British Thomson-Houston Company, Ltd., one of the largest electrical manufacturing firms in the country, were responsible for the development of this process, which they embodied in the now famous Mazda Drawn-wire Lamp. The early promises of this invention have been fulfilled.

It may be well briefly to re-describe this invention. By the process employed in the manufacture of Mazda lamps pure tungsten is drawn into a fine wire with a tensile strength greater than steel. The drawn-wire filament is produced and used in one continuous length, thus ensuring a uniform diameter throughout, instead of the varying sections of the old pressed filament lamp. It is also possible to wind the continuous drawn filament on a flexible mounting, thus doing away with the rigid joints and supports necessary in a pressed filament lamp. As a result the drawn-wire filament is many times stronger than the old pressed filament, not only at the beginning, but throughout its life.

No sacrifice of efficiency has been made in the Mazda Drawn-wire Lamp—indeed, it is probably slightly more efficient than the pressed lamp—but its strength and durability enable it to be employed satisfactorily under conditions that would be impossible with the latter. At the present time it is being used on battleships during heavy gun practice, in tramcars and railway trains, in coal mines and factories, and in public buildings, shops, offices, and private houses all over the world.

The rapidity with which the new lamp has bounded into popular favour is noteworthy. Over 10,000,000 Mazda Drawn-wire Lamps were sold last year in all parts of the globe—and this after only a year's working of the process.

THE total membership of the Amalgamated Society of Carpenters and Joiners is officially announced at 75,979. There were last week 1,021 in receipt of unemployed benefit, 1,394 in receipt of sick benefit, and 2,644 in receipt of superannuation allowance. The executive also announced an advance of a halfpenny per hour in the wages of their members at Chepstow, Keighley, and Dumfries. At Langford their members had received 28s. per week for the present, that amount to be further increased to 30s. per week when existing contracts now in hand were completed.

MESSRS. PATMAN & FOTHERINGHAM, LTD., 100 and 102 Theobald's Road, W.C., also of Park Street, Islington, have recently been successful in securing the following contracts: Extension to Mayfair Works, Miles Street, South Lambeth Road, for Messrs. Brand & Sons; taking down and rebuilding front and other alterations at No. 70 Fleet Street, for Messrs. Sweetings, Ltd.; and new works and garage, &c., for the National Steam Car Co., Nunhead Lane, Peckham, S.E.

A NOVEL CONTINENTAL HOLIDAY COURIER.

RECENT events have endowed Germany with such peculiar interest to the English that many holiday makers desire to see something of that country. To those, however, not knowing the language there is the difficulty of finding out where to go and what to see with the minimum of expense and trouble.

A very commendable attempt has been made by the Great Central Railway Company to overcome this difficulty by the issue of a Continental courier for Berlin and Hamburg. Carried with ease in the vest pocket, it so maps out the tourist's time that his visit is made a round of pleasure combined with instructive and interesting experiences from the moment of arrival to the hour of departure.

The name of each point of interest is given in English and German, but the latter is phonetically spelt. The inclusion of a dictionary of every-day phrases, with their anglicised pronunciation, completes the brochure.

Copies may be obtained post free from the Great Central Railway Publicity Bureau, 216 Marylebone Road, N.W., or at any of Messrs. Dean & Dawson's offices.

MR. F. B. LEWIS, A.R.I.B.A., city architect, Nottingham, has resigned his appointment, owing to reasons of health. A native of Nottingham, Mr. Lewis completed his articles with the firm of Messrs. T. C. Hine & Son (the then agents for the Duke of Newcastle), and soon afterwards entered the service of the Council, where he has remained for twenty-six years.

MESSRS. BRUNNER, MOND & Co., the chemical manufacturers, of Winnington, Northwich, and other places, intend to erect a considerable number of workers' model dwellings, on the garden city principle, about their various estates in the Northwich district. As a temporary expedient, they will erect one hundred temporary dormitories, and fifty bungalows for married men in the Avenue, Winnington. In the meantime, a garden city architect is preparing plans of model dwellings.

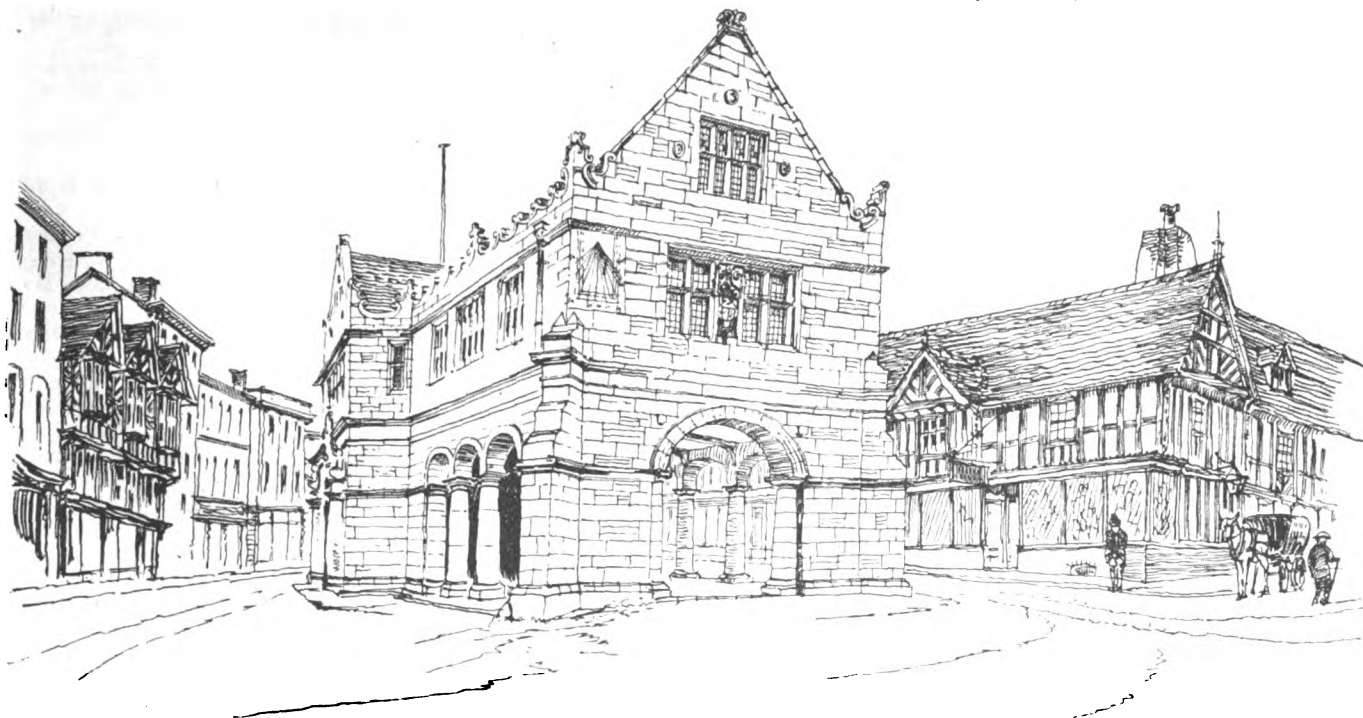
THE Glasgow Corporation at their meeting on the 5th inst. adopted a recommendation that baths for Govanhill and Langside districts be erected on the north side of Calder Street, near Victoria Road, at an estimated cost of £29,000. The site extends to an area of about 2,750 square yards. Plans were submitted providing for two swimming ponds, thirty-six hot-water baths for males and eight for females, and Turkish baths for the accommodation of fifteen persons.

THE School of Art Wood-Carving, 39 Thurloe Place, South Kensington, which is under Royal patronage, has been reopened after the usual summer vacation, and we are requested to state that some of the free studentships in the evening classes maintained by means of funds granted to the school by the London County Council are vacant. The day classes of the school are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the Secretary.

THE Urban District Council of Spennymoor has received the sanction of the Local Government Board to the borrowing of money for a new sewage scheme. The work, which is to cost about £23,000, involves the laying of about 5½ miles of sewers and the construction of disposal works to deal with the sewage of a population of 18,000. The scheme has been designed by Mr. C. Franklin Murphy, A.M.I.C.E., of Morpeth, and is to be carried out under his supervision.

THE annual exhibition of the Royal Photographic Society is being held this year at the Galleries of the Royal Society of British Artists in Suffolk Street, Pall Mall, from September 2 till September 21. The premier Photographic Society has hung between six and seven hundred exhibits by home, foreign and colonial workers, and among them are many calling for careful study. Photography has by no means yet reached its Ultima Thule, and each year sees some advance made in technique or in artistic treatment, trifling, perhaps, in each instance, yet in the aggregate leading to marked improvement. The exhibition as usual is divided into two main sections, the pictorial and the scientific, and while the former is and always will be the more popular, it is in the latter that improvements are most frequently made and shown, to be afterwards adapted to the use of the more popular side of the art.

THE ARCHITECTURAL ASSOCIATION EXCURSION, 1912.



SHIRE HALL, SHREWSBURY.
C.E.B. 1912



Sketches by Mr. C. E. BATEMAN, F.R.I.B.A.

PRESERVATION OF SCENERY IN FRANCE.

IN every civilised country the ugly advertisement hoardings erected along the roads and railways, often amid the most beautiful scenery, have become an eyesore. The American Consul at Lyons gives some interesting information in a recent report to Washington as to the measures which the French authorities are taking to deal with the question. A heavy stamp tax is about to be levied, he says, on all signboards that can be seen from any public path, road, or railway. All such advertisements set up, except on the wall of a house or enclosure, or within 328 feet of any group of houses or buildings, will be taxed. The tax will be doubled if there are two advertisements together, trebled when there are three advertisements, and quadrupled for four or more.

Motorists, in particular, have campaigned against the wayside signboard, adds the Consul, and in some places here

restrictive measures have already been taken by the local authorities within their jurisdiction. Many people would like to suppress the signboard in rural districts altogether, but it is considered encroachment on the personal liberty of a landowner to prohibit him from allowing signboards to be erected on his own property. It is, however, possible, through legislative enactment, to impose a tax sufficiently high to diminish the quantity of signboards that are increasing in a disturbing manner in some of the most beautiful regions in France.

A GUILD has just been formed at Stratford-on-Avon to supplement and co-operate with all efforts, public or private, that may tend towards preserving the ancient characteristics and beauty of the town. The Mayor has been elected President.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE.

Stockport.—Public library.
Post office.

CORNWALL.

Redruth.—Workhouse: Male infirmary: extension

CUMBERLAND.

Wigton.—New works for Messrs. Carr, White & Co.

DERBYSHIRE.

Borrowash.—Wesleyan Schools, King Street (£1,300).

DEVON.

Devonport.—Workhouse Infirmary: Doctors' Dispensary and Nurses' Home, &c.

Plymouth.—Police Station, Stonehouse. Mr. E. H. Harbottle, F.R.I.B.A. (of Exeter), County surveyor.

ESSEX.

Burnham-on-Crouch.—Drill Hall for the Territorial Association.

Chelmsford.—County Offices, Duke Street (£42,000). Mr. F. Whitmore, County architect.

Epping.—Post office.

Grays.—Headquarters for the Essex Territorial Association.

Harwich.—Police Station. Mr. F. Whitmore (of Chelmsford), County architect.

Manor Park and Southminster.—Headquarters for the Essex Territorial Association.

Romford.—Eighteen cottages, Abbs Cross Road (or South End Road). Council surveyor.

Headquarters for the Essex Territorial Association.

Children's Isolation Block at the Workhouse Infirmary (£500).

Southminster.—(See Manor Park.)

Thundersley.—Congregational Church.

Walthamstow.—Headquarters for the Essex Territorial Association; also

West Ham.—"The Cedars": reconstruction.

HAMPSHIRE.

Bournemouth.—Congregational Church, Wimborne Road.

East Conservative Club, Holdenhurst Road: additions.

"Royal Bath Hotel": additions.

House, plot 48, Charminster Avenue, for Mrs. Lane.

House, Chessel Avenue, for Mr. F. A. Grigg.

House, plot 52, Chessel Avenue, for Mr. J. E. Jones.

House, plot 205, corner of East Avenue and Berwick Road, for Messrs. A. Lambert & Son.

Two houses, plots 8 and 10, Seaward Avenue, for Mr. C. H. Lloyd.

Ten houses, Wentworth Avenue, for Messrs. Burridge & Bovill.

"The Knole," Meyrick Park Crescent: additions for Miss Newton.

Three houses, Portman Crescent, for Mr. R. Holly.

House, plot 36, Queen's Park, South Drive, for Messrs. J. & W. Hayward.

House, plot 16, Moorfield Grove, for Miss C. Weidlich.

"Cambridge House," Richmond Hill: additions for the Bournemouth Free Church Council.

House, Cliff Road, Boscombe Manor, for Miss Davidson.

"Marden Ash," Bath Road: additions for Mrs. G. Peel.

House, plot 211, Berwick Road, for Mr. M. B. Castle.

House, plot 8, Charminster Road, for Mr. C. Frampton.

"Karrakatta," Christchurch Road: additions for Messrs. Lawson & Reynolds.

"Portman House," Durley Road: additions for Mr. H. Brooks.

"Sticklepath," Durley Road: additions for Dr. G. A. Reid.

House, plot 330, Evelyn Road, for Mr. J. Lovell.

Two houses, plots 29 and 30, Frederica Road, for Messrs. A. & W. King.

Three houses, plots 86 to 88, Hathaway Road, for Mr. W. H. Elcock.

House, plot 10, Hill Brow Road, for Mr. C. Roberts.

"Needwood," Hinton Road: additions for Miss Fiennes.

House, plot 283, Lowther Road, for Messrs. Lambert & Son.

Two houses, plots 41 and 42, Newstead Road, for Mr. E. G. Evans.

House, plot 176, Pine Road, for Mr. A. J. Curnow.

"Kinrara," Portarlington Road: additions for Mr. W. H. Thompson.

Pair houses, plot 250, Rebbeck Road, for Mr. J. Houston.

Two pairs of houses, plots 256 and 258, Roberts Road, for Miss Burridge.

House, plot 79, Stirling Road, for Mr. F. W. Beynon.

House, plot 149, Stronden Road, for Mr. H. W. King.

"Ballyhire," Walpole Road: additions for Mr. Harley.

"Arnewood," West Cliff Road: additions for Messrs. F. Hoare & Sons.

No. 8 The Square: additions for Mr. H. J. Tuson.

Three houses and shops, Christchurch Road, for Mr. J. Sainsbury.

Endowed High School for Girls, Norwich Avenue: additions for the Governors.

Cosham.—Sixteen houses, Knowsley Road.

HUNTINGDONSHIRE.

St. Neots.—Paper mill.

KENT.

Bromley.—Workhouse: additions and alterations (£15,000).

LANCASHIRE.

Bolton.—Electric power station, Back-o'-th'-Bank.

Eight houses, Abingdon Road, for Messrs. Leigh Brothers, Ltd.

House, Adelaide Street, for Messrs. Tootal, Broadhurst, Lee & Co., Ltd.

Twenty-five houses, off Eden Street, Astley Bridge, for Mr. W. E. Yates.

"The Grove," Chorley New Road: alterations for Colonel Musgrave.

Six houses, Georgina St., for Messrs. Hughes Bros.

Four houses, Woodstock Drive, Smithills, for Messrs. Leigh Brothers, Ltd.

"Stag's Head" Inn, Junction Road: alterations for Mr. Blackledge.

Premises, Lower Bridgman Street: extensions for Messrs. Hodgkinson & Gillibrand.

Premises off Hacken Lane: addition for Riversdale Weaving Co., Ltd.

Cotton Stores, Chorley Old Road, for Musgrave Spinning Co., Ltd.

Weaving Shed, Bury Road: extensions for Messrs. Rusden & Co.

Todmorden.—The "Fielden Hotel," Fielden Square: conversion into Conservative Club (£1,000).

LINCOLNSHIRE.

Alford.—Premises, High Street: alterations for Mrs. Small.

Lincoln.—Workhouse Infirmary.

MIDDLESEX.

Sunbury.—Six houses, Orchard Road, Park Road, for Messrs. Smith & Co. (of Walthamstow).

MONMOUTHSHIRE.

Newport.—Offices and stores, &c., for the Electricity and Tramways Departments (£6,250).

NORTHAMPTONSHIRE.

Northampton.—Girls' Secondary School.

NORTHUMBERLAND.

Alnwick.—"Hillcrest": additions; Mr. G. Reavell, A.R.I.B.A., architect. Also

Alterations at "Douglas House," Bondgate Within.

Annitsford.—Aged miners' cottages.

Heaton.—Picture Hall, corner of Biddlestone and Chillingham Roads (for 1,500 sittings). Messrs. White & Stephenson (of Newcastle), architects.

Whitley Bay.—Wesleyan Chapel: Hall and vestries (£820).

NOTTINGHAMSHIRE.

East Kirkby.—Council Schools for 400 places.

Nottingham.—Trent Swimming Baths: Refreshment room (£550). City architect.

Stoke.—St. Margaret's Church: restoration (£2,500).

Underwood (Selston).—Council Schools for 300 places.

SHROPSHIRE.

Billingley.—Thirty-six cottages.

SOMERSET.

Brislington (near Bristol).—Infants' Council School. Mr. A. J. Pictor, A.R.I.B.A. (of Bruton), architect.

Combe St. Nicholas.—Parish room.

STAFFORDSHIRE.

Hanley.—Church, Joiners' Square.*Hednesford*.—Miners' Rescue Station.*Stafford*.—Seventeen cottages, Marston Road, for Messrs. J. Morgan & Sons.

Four houses, St. George's Road, for Mr. A. Ancill.

Two houses, Sandon Road, for Mr. W. Skelthorne; also

Two houses, Weston Road.

Engineering School, Victoria Square, for the Education Committee.

Warehouse and stable, off Freeman Street, for Mr. W. Davies.

Working-class dwellings, Backwalls South (£3,200).

Wolverhampton.—Motor-cycle works, Pool Street, for Messrs. Marston, Ltd.

SUSSEX.

Chichester.—Children's Cottage Home, for the Guardians of the poor.

WARWICKSHIRE.

Erdington.—Picture Theatre, Coventry and Grange Roads corner.

Picture Theatre, Wilton Road and High Street corner.

WORCESTERSHIRE

King's Heath.—Picture Theatre, High Street and York Road corner.*Newton*.—Hospital alterations (£550).*Rowley Regis*.—Technical Schools at Wright's Lane Schools (£1,500).

YORKSHIRE.

Brighouse.—Public baths (£5,000).*Cawood*.—Wesleyan Chapel reconstruction. Mr. Birch (of York), contractor.*Hebden Bridge*.—St. John's Church (accommodation for 500 sittings), £6,500.*Hull*.—Tuberculosis Sanatorium for 100 beds (£15,000).

WALES.

Bargoed.—Two semi-detached houses at Aberbargoed. Mr. H. Caldwell, C.E. (of Blackwood, Mon.), architect.*Llanarmon (Denbighshire)*.—The Grianrhyd Council School.*Llandudno*.—Police buildings (£4,500). Mr. Holt, architect.*Pontypridd*.—Institution for the feeble-minded (£60,000).*Swansea*.—Tabernacle Baptist Chapel, Wheatfield Terrace: Schoolroom, cloakroom, &c.

Cinema hall and shop, St. Helen's Road, for Messrs. H. C. Behenna & Co.

Glynn Vivian Mission Hall, Pentremawr Road: additions.

SCOTLAND.

Airdrie.—Tuberculosis Hospital. Messrs. G. Arthur & Son, architects.*Dalbeattie*.—Board School: additions.*Dunfermline*.—The Hill House: additions and alterations for the Earl of Elgin (£4,000). Mr. F. W. Deas, M.A., F.R.I.B.A. (of Edinburgh), architect.*Gartcosh*.—School building, Lochend Road, for the Cadder School Board.*Kilbirnie*.—Board School at Newhouse.*Kilmarnock*.—Buildings, Bonnyton Road: alterations for the Ayrshire Coal Owners' Association (£750).

Smithy, West Langlands Street, for Messrs. Andrew Barclay, Sons & Co., Ltd. (£500).

Bonded warehouse, Strand and Croft Streets, for Messrs. John Walker & Sons, Ltd., distillers (£5,000).

Wool store, &c., Lawson Street, for Messrs. Douglas, Reyburn & Co. (£660).

Kirkcubbin.—Board School (£3,100). Mr. Crombie (of Dumfries), architect.*Kirkpatrick-Durham*.—Board School (£1,370).*Motherwell*.—Dalziel United Free Church, Mair Street (£5,000).*Rutherglen*.—Manse.*Scotstoun*.—Ten semi-detached houses, Park Drive North, for the Estate Building Company (£6,000).*Shettleston*.—Double cottage, Hallhill Road, for Mr. J. Stephen.

Block of houses, Croftspar, for Major G. R. Cruden.

Shieldhall (South Govan).—Scottish Co-operative Wholesale Society, Ltd.: extension of buildings in Renfrew and Maxwell Roads.*Stepps*.—Cottage, Whitehill Farm Road, for Mrs. S. Smith.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 21,697. Oct. 2, 1911.—Improvements in or relating to the manufacture of cement. J. G. A. Rhodin, 96 Albert Street, Camden Town, N. The object of this invention is to extract the potash from felspar with water after heat treatment with lime and common salt, leaving a slurry, which is wet with the salt solution, which slurry, subsequently with or without additional lime in a finely divided condition is converted in one firing into a white hydraulic cement at such a low temperature that no re-grinding is necessary. The reducing of the alkali salts to a minimum, and their distribution through the mass in the form of a solution, constitute the subject matter of this invention. Numerous experiments have shown, however, that treating felspar by certain known methods introduces serious manufacturing difficulties, and limits the usefulness of the resulting cement. 1. The mixing of a small quantity of salts with a large quantity of felspar and lime is very difficult when dry-grinding is used, and to obtain the desired effect excessive quantities of these contact substances must be used. Even then it is well nigh impossible to make the two charges fire alike, notwithstanding the most careful application of pyrometric control. Mixtures made on a commercial scale yield a very indifferent cement. The difficulty of dry-grinding is well known in Portland cement manufacture, and it has led to the abandonment of the "dry slurry" for the "wet slurry" process. 2. If the proportion of contact salts is sufficient to allow a cement to be made, then this cement contains such a quantity of soluble salts as to cause "sweating" in a moist atmosphere, and to make the surface peel off after prolonged exposure. 3. A cement made from "raw" felspar contains too high a percentage of alkalies to weather well. 4. Moreover, when working with commercial qualities, it is utterly impossible to make the heat permeate the mass of dry powder, since the latter is practically a non-conductor. In view of these difficulties, the inventor has introduced potash extractions, and altogether abandoned the dry slurry process. As one example: 100 parts of felspar, 56 parts of slaked lime, and 40 parts of common salt, all finely divided, are carefully mixed together and heated in the well-known manner to 900° or 1,000° C. for about one hour. The resulting mixture is lixiviated with hot water, the solution is run off for crystallisation, &c. The wet insoluble mass is washed with hot water till the wet slurry shows contents of chlorine corresponding to approximately 0.25 per cent. of common salt, calculated on the dry weight of the residue. In a suitable mixing-machine is placed a quantity of lime, sufficient to adjust the hydraulic modulus, and gradually add the slurry whilst the machine is running. The water slakes the lime, and the heat evolved evaporates most of the excess, which leaves as steam. By careful adjustment of the quantity of water a nearly dry mixture results, with the soluble salts absolutely evenly distributed on the rest. Working to a paste is also permissible. With the above-mentioned proportions, a thoroughly washed, dried, and carbonated "residue" has the average composition:—

Soluble in hydrochloric acid.	Silica (SiO ₂) insoluble	60
	Alumina (Al ₂ O ₃)	7
	Lime (CaO)	24
	Carbon-dioxide (CO ₂)	6.5
	Alkalies	2.5
		100.0

By far the greatest part of the lime is chemically combined with silica, and the "residue" itself has the nature of a chemical compound, closely allied to natural calcium-trisilicate (adelforsite of Hisingen) impregnated by kaolin. In gauging the necessary quantity of lime to be added one must calculate on a total of 45 to 55 per cent. CaO in the finished cement. Weighing the lime before slaking, this means adding to 100 parts of residue calculated as a dry substance, from 40 to 70 parts CaO.

MR. F. W. ROBERTS, F.R.I.B.A., Taunton, has been elected as surveyor to the Taunton Town Trust in the place of Mr. J. Houghton Spencer, architect, who recently resigned through failing health, after holding the appointment for forty-four years.

PATENT SPECIFICATIONS PUBLISHED SEPTEMBER 5, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 16,277. July 14, 1911.—F. E. Matthews, Ph.D., F.I.C., 7 Staple Inn, W.C. Manufacture and production of varnishes and paints.

18,249. Aug. 12, 1911.—W. E. Hipkins, Soho Foundry, Birmingham. Weighbridges.

18,277. Aug. 12, 1911.—Alphonse Reis, 7 rue de Bom, Antwerp, Belgium. Vapour burners. (Producing gas from petrol.)

18,334. Aug. 14, 1911.—Thomas Judd and L. V. Riley, 115 Holloway Road, N. Electrical heating element.

18,372. Aug. 14, 1911.—C. T. Robinson, 12 Lutwyche Road, Catford, S.E., and S. J. Prescott, 45 Church Street, Camberwell, S.E. Valves, for facilitating the repair thereof.

18,486. Aug. 16, 1911.—William Anderson, Scotia Villa, Newport, Fife. Ball water-cocks for cisterns and the like.

18,724. Aug. 19, 1911.—W. J. Lamb, 15 Dinorwie Road, Anfield, Liverpool, and J. H. Clegg, 16 Blenheim Road, Liscard, Cheshire. Valves and valve seats.

18,765. Aug. 21, 1911.—C. H. Sparks, 23 Avenue Road, Forest Gate, E. Gutter bracket and wedge.

19,734. Sept. 5, 1911.—Reginald Murgatroyd, 10 Stephen Street, Stockport. Non-scorching baking and cooking tray, for use in ovens and the like.

19,960. Sept. 7, 1911.—Franz Jordy, 27 Stralsunderstr, Berlin, and Carl Harting, 7 Eisenacherstr, Berlin. Method of generating gas.

20,757. Sept. 20, 1911.—S. Carter, 10 Cardwell Road, Garston, Liverpool. Means for separating and removing liquid impurities from gas.

21,026. Sept. 23, 1911.—C. M. Holmquist, 52 Regent Street, W. Electric heating apparatus.

22,565. Oct. 12, 1911.—J. W. Murray, 53 Rayleigh Road, Wimbledon. Folding seats, tables, and the like.

23,704. Oct. 26, 1911.—C. H. Mower and Waldemar Hessling, 147 Queen Victoria Street, E.C. Drying apparatus.

24,397. Nov. 3, 1911.—Peter Fyfe, 23 Montrose Street, Glasgow. Gas fires, ovens, and registers in which gas is used as fuel.

25,527. Nov. 16, 1911.—J. M. Butterfield, Wentworth House, High Road, East Finchley, N. Acetylene and other gas generators.

25,826. Nov. 20, 1911.—John Badger, 15 Summer Row, Birmingham. Locks and latches for sliding doors.

25,906. Nov. 20, 1911.—Geo. Clements, 445 Eaglewood Avenue, Chicago. Vacuum cleaners.

26,131. Nov. 22, 1911.—L. H. Teale, 1 Heathfield Terrace, Far Headingley, Leeds. Domestic fireplaces.

27,783. Dec. 11, 1911.—A. C. Manifold, 186 Lewisham Road, Lewisham, S.E. Machinery for grinding, rubbing, and polishing surfaces such as mosaic, terrazzo, parquet flooring and the like.

28,619. Dec. 19, 1911.—J. P. Clifton, C. C. Trow, H. C. Redfearn, and P. L. Marvin, Buffalo, Erie, U.S. Jet suction apparatus for vacuum cleaning or ventilating.

29,284. Dec. 29, 1911.—R. T. Johnson, Trent Sanitary Works, Stoke-on-Trent. Means for supporting lavatory basins.

2,617. Feb. 1, 1912.—W. J. Watkins, Fort Worth, Tarrant, Texas, and the Oxine Gas Manufacturing Co., of same address. Manufacturing carburetted gas.

3,351. Feb. 9, 1912.—Edward Richards, 7 Cart Lane, Temple, Bristol. Stays for swing-winlows, fanlights, and the like.

4,621. Feb. 23, 1912.—H. F. S. Phillpot, 24 Church Street, Kidderminster, and William Johnstone, Central Chambers, Kidderminster. Vacuum sweepers or dusting devices.

5,648. March 6, 1912.—Date claimed under International Convention, March 8, 1911. M. F. Hoffmann, 21A Lachswehr-Allee, Lubeck, Germany. Water-closets.

5,818. March 8, 1912.—A. R. Poole, 9 Langholm Crescent, Darlington. Distributing tank for use in systems of heating by liquid circulation.

6,112. March 11, 1912.—E. T. R. Murray, Erie, Radlett, Herts. Manually or otherwise operated electric switches with automatic releasing mechanism.

7,354. March 26, 1912.—F. J. Nice, 49 Lake Street, Pontiac, Oakland, Michigan, U.S. Heating furnaces.

9,152. April 18, 1912.—W. F. Green, Modesto, Stanislaus, California, U.S. Condensers for use in acetylene gas plant.

16,157. July 10, 1912.—Nederlandsche Belonyzerbouw A.G., 35 Haadhuistraat, Amsterdam, and Jan Mijs Nieuwe's Gravelandscheweg 57, Bussum, Holland. Method of making concrete impervious to liquids.

VARIETIES.

GLAMORGANSHIRE Guardians are considering a scheme for the establishment of central homes for the care and education of the feeble-minded. It is proposed to erect an institution at a cost of £60,000.

THE Barnsley Town Council on Tuesday adopted the recommendation of their Finance Committee that steps should be taken to provide municipal offices and a Town Hall.

THE Blackburn Town Council last week unanimously approved of an important town-planning scheme, embracing a residential area covering several miles, bounded by the Preston Road, Brownhill, and Revidge districts.

MR. A. E. CORBETT, F.R.I.B.A. (of the firm of Messrs. Woodhouse, Corbett & Dean, architects, Manchester) has accepted an appointment of Government inspector of technical schools in the North of England. A presentation of a gold watch and a gold-mounted fountain pen was made to Mr. Corbett last week in the rooms of the Manchester Society of Architects.

TRADE NOTES.

UNDER the direction of Mr. R. T. Longden, Lic.R.I.B.A., Stoke-on-Trent, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "Air-Pump" ventilators and air inlets, has been applied to Rudyard Chapel, Rudyard, Staffs.

MESSRS. JOHN TANNER & SON, of Westminster and Liverpool, have been engaged by Mr. Alfred Butt and Mr. Walter de-Freeze, of the Palace Theatre, Shaftesbury Avenue, and directors of numerous other theatres, to execute the whole of the fibrous plaster work and decorations at the new music-hall which is now being erected on the site of the old White City, at Newcastle, from designs of Messrs. W. & T. R. Milburn, architects, of Sunderland and Newcastle. The theatre is unique in character to the extent that it has neither dress circle nor gallery, and will be capable of seating 3,000 people.

MESSRS. JOHN WARNER & SONS, LTD., of the Spitalfields Foundry, London, N.E., are to supply and erect a new bell, weighing 6 cwt., note D, to be rung by electricity, at the Church of the Holy Spirit, Clapham, S.W. This method is entirely new. The entire absence of ropes and pulleys and noise is a great boon, to say nothing of the fact that the speed of the bell can be regulated at will to suit all tastes. The ring of six bells of Wallasey Parish Church, near Liverpool, are to be rehung by Messrs. John Warner & Sons, who recently erected the new ring at the Church of St. Nicholas, Wallasey.

MESSRS. E. H. SHORLAND & BROTHER, LTD., of Failsworth, Manchester, are carrying out the following warming and ventilating contracts: The Church National Schools, Beccles, and the Sibertswold Schools, near Dover, are being supplied with Shorland's warm-air ventilating patent Manchester grates; the Irlam New Picture Palace, Manchester, is being ventilated by means of their patent exhaust roof ventilators and special inlet ventilators; and the new Isolation Hospital, Staines, Middlesex, is being supplied with patent warm-air ventilating Manchester stoves with descending smoke flues, patent exhaust roof ventilators, and special inlet ventilators.

THE Committee of the Old Boys of the Rothesay Academy, Isle of Bute, Scotland, are going to provide an illuminated clock, showing the time upon three large external dials and striking the hours and quarter chimes, which will be erected by Messrs. Wm. Potts & Sons, Ltd., clock manufacturers, Leeds and Newcastle. The contractors are also making a clock for Gateshead-on-Tyne and a hour striking clock for Tydd St. Mary, on the Lincolnshire and Cambridge borders, and a clock for Messrs. Jackson & Co., Ltd., Anlaby Road, Hull. Messrs. Potts & Sons recently erected clocks at Askham Parish Church, near Retford, Notts; West Butterwick Church, Lincolnshire; Hartshead Church, near Brighouse, West Yorks; and the Joseph Rowntree Trust clock and bell at the Schools, New Earswick, near York; new church clock, Carlisle; and King Edward Memorial clock and bell, near Appleby, Westmoreland; Abbey Town, Cumberland. King Edward Memorial clock and bell; and Scarborough College, new clock and bell.

THE Architect and Contract Reporter.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

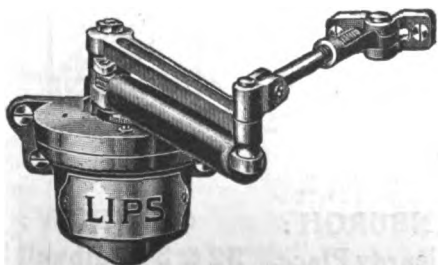
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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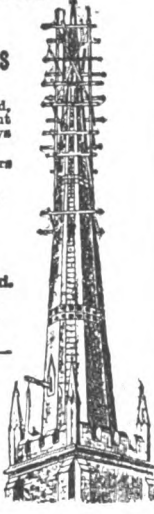
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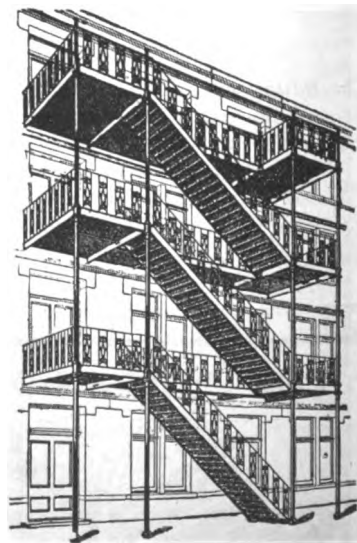
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GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

IRELAND.—Sept. 30.—The Governing Body of University College, Dublin, invite architects to submit designs for new college buildings. The competition is limited to architects living and practising in Ireland. Mr. H. T. Hare, F.R.I.B.A., has been appointed to act as assessor. Applications for conditions must be accompanied by a cheque for £2 2s., which will be returned on receipt of a bona-fide design. Mr. J. W. Bacon, M.A., Secretary and Bursar, 86 St. Stephen's Green, Dublin.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Coleshill Terrace, Llanelly.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ALTRINCHAM.—Oct. 7.—For the erection of a public convenience in Kingsway. Mr. H. E. Brown, surveyor, Town Hall, Altrincham.

BARROW-IN-FURNESS.—Sept. 23.—For erection of a confectionery shop, &c., in Abbey Road, for the Barrow Co-operative Society, Ltd. Mr. H. T. Fowler, A.R.I.B.A., 6 Cornwallis Street, Barrow-in-Furness.

BRIDLINGTON.—Sept. 23.—For the erection of a dwelling-house and shop at Lansdowne Road. Mr. Samuel Dyer, architect and surveyor, Quay Road, Bridlington.

BRISLINGTON.—Sept. 25.—For erection of an infants' Council school at Brislington, for the Somerset County Council. Mr. A. G. Skilling, Homeside, Brislington, or Mr. A. J. Pictor, A.R.I.B.A., Bruton.

BROADCLYST.—Sept. 27.—For erection of a detached house at Coachfield, Broadclyst, Devon. Mr. E. E. Ellis, architect, Polsloe Road, Exeter.

BURLEY.—Sept. 26.—For erection of an additional classroom for 50 children and storeroom, alterations to cloakroom, and regrading, gravelling, and tar-paving playground at Burley Council school, for the Hampshire County Council. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

CATTON.—Oct. 2.—For the alterations and additions to Catton Council School (full tenders), for the North Riding of Yorkshire County Council Education Committee. The School, and Mr. J. C. Wrigley, secretary, County Education Offices, Northallerton.

CHRISTCHURCH.—Sept. 21.—For erection of a laundry at their workhouse, Christchurch, Hants. Send names and £5 deposit by Sept. 21 to Mr. A. Drutt, clerk, Christchurch.

GILSLAND.—For extensions to Spa Villa, for the Gilsland Convalescent Home, Ltd. Mr. L. G. Ekins, architect, Co-operative Wholesale Society, Ltd., West Blandford Street, Newcastle-on-Tyne.

GREAT YARMOUTH.—Sept. 30.—For extensions to the fire brigade and police stations, Middlegate Street. The Borough Surveyor.

HALIFAX.—Sept. 27.—For the erection of a staircase at the Council secondary school and wood fencing at Christ Church school. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

HARROGATE.—Sept. 30.—For the necessary ironwork in connection with extensions to the Royal Pump Room, for the Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Harrogate.

HUDDERSFIELD.—Sept. 30.—For erection of new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Huddersfield Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

IRELAND.—For erection of semi-detached villas, Divis Drive, Belfast. Messrs. Connolly & M'Avoy, M.R.I.A.I., architects, Oxford House, Oxford Street, Belfast.

IRELAND.—Sept. 23.—For erection of salt-water baths and hydro at Youghal, co. Cork. Mr. J. F. M'Mullen, M.R.I.A.I., architect, 30 South Mall, Cork.

IRELAND.—Sept. 24.—For additions to Union Hall National School, Leap, Co. Cork. The District Office of Public Works, Cork.

IRELAND.—Sept. 24.—For erection of a Crown post office at Tuam, Co. Galway. Deposit £1. The Office of Public Works, Dublin, and the Post Office, Galway.

IRELAND.—Sept. 25.—For the erection and furnishing of National School buildings at Derrinkehir, Ballinamore, Co. Leitrim. Royal Irish Constabulary Barracks, Ballinamore.

IRELAND.—Oct. 7.—For alterations and additions to their Locomotive Department Offices at Dundalk, for the Great Northern Railway Co. (Ireland). Deposit £2 2s. Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

IRELAND.—Oct. 8.—For alterations and additions to the General Post Office, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Oct. 10.—For erection and furnishing of National school buildings at Drumclugh, Bantry, co. Cork. Bantry Royal Irish Constabulary Barrack.

IRELAND.—Oct. 10.—For erection and furnishing of National school buildings at Coomhola, Bantry, co. Cork. Bantry Royal Irish Constabulary Barrack.

LEEDS.—Oct. 7.—For the supply and erection of a steel and corrugated iron building, and the necessary surface-water drainage of the same, at the permanent way depôt, Sovereign Street, for the Tramways Committee. Send applications by Sept. 30 to Mr. J. B. Hamilton, general manager, Leeds.

LONDON.—Sept. 23.—For erection of a residence for the medical superintendent and four workmen's cottages on the grounds adjoining their isolation hospital, World's End, Winchmore Hill, N., for the Enfield and Edmonton Joint Hospital Board. Mr. R. Collins, Public Offices, Enfield.

LONDON.—Sept. 25.—For constructing verandahs and for alterations to fire-escape staircases at the Brook Fever Hospital, Shooter's Hill, Woolwich, S.E., for the Metropolitan Asylums Board. Deposit £1 1s. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, London, E.C.

LONDON.—Oct. 1.—For erecting a training college and one hostel, and also adapting an existing house for a hostel on the Furzedown site, Tooting, S.W., for the London County Council. The Superintending Architect's Department (Room 74), 19 Charing Cross Road, W.C. Send £5 deposit to the Cashier of the Council at County Hall.

MACCLESFIELD.—Sept. 24.—For improvements to the sanitary blocks in the main building at the Parkside Asylum. Deposit £1. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester, or at the Asylum.

MANCHESTER.—Sept. 25.—For extensions to the Moss Side and Rusholme branch libraries, for the Libraries Committee. The City Architect, Town Hall. Send £1 1s. deposit to the City Treasurer.

MANCHESTER.—Sept. 25.—For the fitting up of arches as stables at Oldham Road goods yard, Manchester, for the Lancashire and Yorkshire Railway. The Engineer's Office, Hunt's Bank, Manchester.

MICHELMERSH.—Sept. 24.—For erection of a corrugated iron cookery room at Michelmersh Council school, for the Hampshire County Council. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

MILNSBRIDGE.—Sept. 24.—For the various works (joiners' excepted) required in erection of three houses, Radcliffe Road, Milnsbridge. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

MILNTHORPE.—For the various works in reinstating the farm buildings at Viver Farm, Milnthonpe, and for building additional byres. Mr. J. Stalker, M.S.A., architect, 57 Highgate, Kendal.

NELSON.—Sept. 28.—For the construction of a brick skew arch bridge with stone facings over the river in Carr Hall Road, for the Corporation. Deposit £2 2s. Mr. W. Shackleton, A.M.I.C.E., borough engineer and surveyor, Town Hall, Nelson.

NEWTON ABBOT.—Sept. 30.—For erection of a children's ward at the Newton Abbot Hospital, for the Hospital Committee. Deposit £1 1s. Mr. J. C. Beare, architect, Newton Abbot.

CLEDFORD BRIDGE.—For erection of the mission room at Cledford Bridge, near Middlewich. Apply to Rev. A. G. Child, the Vicarage, Middlewich.

ORMSKIRK.—Sept. 25.—For the construction of platforms and erection of buildings at Aughton Park Halt, near Ormskirk, for the Lancashire and Yorkshire Railway. The Engineer's Office, Hunt's Bank, Manchester.

ORMSKIRK.—Sept. 25.—For erection of buildings for electric sub-station and battery station at Ormskirk, for the Lancashire and Yorkshire Railway. The Engineer's Office, Hunt's Bank, Manchester.

PERRY BARR.—Sept. 23.—For erection and completion of a Council School, to accommodate 100 children, at Perry Barr, near Birmingham, for the Staffordshire Education Committee. Send applications and £1 1s. deposit to Mr. G. Balfour, director of education, County Education Offices, Stafford.

REDCAR.—Oct. 2.—The North Riding of Yorkshire County Council Education Committee invite full tenders for erection of a cookery and manual instruction room at West Dyke Council school. Mr. Mennell, Cleveland District Education Office, Redcar.

SALFORD.—Sept. 25.—For alterations and additions to the town hall, police department, and sessions court, for the Corporation. Deposit £2 2s. Mr. J. B. Broadbent, A.R.I.B.A., 15 Cooper Street, Manchester.

SCOTLAND.—For the mason, concrete, iron, corrugated iron, plumber, painter and glazier works of proposed additions to garage, for Messrs. Macrae & Dick, Inverness. Send names to Messrs. Cameron & Burnett, architects, Academy Buildings, Inverness.

SCOTLAND.—Sept. 26.—For the second portion of the laboratory buildings at the Royal Botanic Gardens, Edinburgh, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work, and not for separate trades. Deposit £1 1s. H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Oct. 2.—For the following works in connection with alterations at the Heriot-Watt College, Edinburgh, to provide new chemical laboratories—viz: Mason work, carpentry and joiner work, plaster work, plumber work, and painter work, for the Governors of the George Heriot's Trust. Mr. J. Anderson, superintendent of works, 20 York Place, Edinburgh.

SCOTLAND.—Oct. 2.—For (1) excavator, mason and brick works; (2) carpenter and joiner works; (3) steel work; (4) slater work; (5) plumber work; (6) plaster and concrete works; (7) tile work; (8) glazier work; (9) furniture; (10) iron railings and gates; (11) heating installation; (12) electric lighting; (13) painter work required in connection with the erection of Finnart school, for the Greenock School Board. (Mr. W. R. Glen, architect, Glasgow.) Deposit £1 for each schedule. Mr. A. F. Niven, clerk, Municipal Buildings, Greenock.

SHEFFIELD.—Sept. 30.—For pulling down several old cottages at the junction of Cricket Inn Road and Broad Street Lane, Sheffield, for the Midland Railway Co. The Estate Agent, Midland Railway, Derby.

SLAITHWAITE.—Sept. 24.—For the masons', plumbers', and slaters' work required in erection of house and workshop in Meal Hill Lane. Mr. A. Shaw, architect, Golcar.

SOUTHEND-ON-SEA.—Oct. 2.—For erection of pumping station and destructor buildings, inclined roadway, two cottages, and other works at the sewage disposal works, Prittlewell. Deposit £5 5s. Mr. E. J. Elford, M.I.C.E., Municipal Buildings, Clarence Road, Southend-on-Sea.

SOUTHPORT.—Oct. 3.—For the extension of the South Marine Gardens including the continuation of the Lake Promenade, and of the concrete wall round the Marine Lake, &c., for the Parks, Foreshore and Cemeteries Committee. Deposit £2 2s. The Borough Surveyor's Office, Town Hall, Southport.

TIDWORTH.—Oct. 7.—The Secretary of State for War invites tenders for the work required in the erection of bath-house and formation of ducts for heating pipes from boiler house to dining-rooms at Mooltan Barracks, Tidworth, Hants, in the Southern Command. The Director of Barrack Construction, 80 Pall Mall, London, S.W., or at the Barrack Construction Office, Tidworth, Hants. Send applications and 10s. deposit by Sept. 27 to the Director of Barrack Construction.

TIPTON (STAFFS.).—Sept. 30.—For erection of new sanitary conveniences, drains, paving of playgrounds and other work. Deposit 10s. Mr. W. H. Jukes, surveyor for the Tipton Education Committee.

TORQUAY.—Sept. 30.—For various alterations and improvements at the Swiss Café, Victoria Parade. Send in names by Sept. 30 to Mr. F. G. Moore, A.M.Inst.C.E., architect and surveyor, 9-10 Fleet Street, Torquay.

WALES.—Sept. 23.—For erection of three shop premises in High Street, Bargoed. Mr. G. Kenshole, M.S.A., Station Road, Bargoed.

WALES.—Sept. 24.—For erection of four houses and one shop at Park Road, Cwmparc, Treorchy, for the Ton Industrial Co-operative Society, Ltd. Mr. W. D. Morgan, M.S.A., architect, 194 Ystrad Road, Pentre, Rhondda.

WALES.—Sept. 25.—For the following works, for the Glamorgan County Council—viz: (a) New school at Senghenydd; (b) improvements at Blaengarw Council School; (c) cookery centre at Newtown County School; (d) offices at Troedrihiwfwch Council School; (e) removal of temporary building from Gorseinon and re-erection at Pontllw; (f) heating chamber at Pontardulais school. The Glamorgan County Hall, Cathays Park, Cardiff.

WALES.—Sept. 25.—For erection of an electric theatre, Stepney Street, Llanelly. Mr. O. P. Bevan, P.A.S.I., architect, Merthyr Tydfil.

WALES.—Sept. 26.—For works of erection of a Council School at Brooks Berriew, and for a water supply, for the Montgomeryshire Education Authority. Deposit £1 1s. Mr. Ll. Phillips, clerk, County Education Offices, Newtown.

WALES.—Sept. 28.—For renovations to Carmel C.M. Chapel, Upper Boat, near Pontypridd, for the Building Committee. Mr. P. J. Jones, architect and surveyor, Church Street, Pontypridd.

WALES.—Oct. 2.—For erection of four houses at Cwm-rhdyceirw, near Morriston, Glamorganshire, for the Great Western Railway Co. The Engineer at Neath Station.

WALES.—Oct. 4.—For erection of new cinema, Brecon. Messrs. Henton & Lewis, architects, 22 Cardiff Street, Aberdare.

WALES.—Oct. 5.—For the erection of fifteen pairs of semi-detached villas, together with the construction of roads, sewers, surface-water drains, on the Meyrick estate, Merthyr Tydfil, for the Meyrick Building Club. Mr. T. E. Rees, architect, Bank Chambers, Merthyr Tydfil.

WALES.—Oct. 9.—The Urban District Council of Rhyl are prepared to receive tenders for the following:—Contract No. 2, comprising the construction of workshop; the providing, erecting and setting to work of a centrifugal pump driven by gas engine for dealing with storm water; alterations to existing buildings, works in connection with existing 18-inch outfall sewer, together with other works. Deposit £5. Mr. Baldwin Latham, M.I.C.E., Parliament Mansions, Victoria Street, Westminster, S.W.

WIGAN.—Sept. 23.—For the roofing with corrugated iron of the tram shed at Martland Mill Bridge, for the Corporation. The Electrical and Tramway Engineer's Office, Bradford Place, Wigan.

WRELTON.—Oct. 2.—The North Riding of Yorkshire Education Committee invite full tenders for alterations and improvements to the Council School. Mr. J. C. Wrigley, secretary, County Education Offices, Northallerton.

TENDERS.

ASPATRIA.

For the construction of sewerage and outfall works. Messrs. SPINKS, FILLING & RODWELL, engineers, Leeds.

Contract No. 1.

MIDDLETON & HOPPER, Langholm (accepted) £5,107 0 0

Contract No. 2.

ARUNDEL, Halifax (accepted) £2,543 0 0

COTTINGHAM (HULL).

For erection of a parish hall, for the Urban District Council. Mr. A. C. BLACKMORE, architect, Hull.

Houlton	£3,520	0	0
Orwin	3,425	0	0
Singleton	3,400	0	0
Levitt	3,375	0	0
Southeran	3,345	4	0
Holiday & Barker	3,173	7	3
Lison & Co.	3,137	15	0
Robinson	3,122	0	0
Fenwick	3,110	0	0
Simpson & Son	3,080	0	0
Finch	3,078	15	0
Bilton	3,065	13	0
Kettlewell	2,969	19	0
W. WHITING, Cottingham (provisionally accepted)	2,939	10	5

DARTFORD.

For the execution of certain works at the workhouse, West Hill. Messrs. TAIT & HOBBS, architects, Dartford.

Packer	£1,245	0	0
Friday & Ling	669	10	0
Milton Bros.	610	0	0
Ellingham	573	0	0
Keevil	569	0	0
T. KNIGHT, Sidcup (recommended)	549	0	0

HARROGATE.

For laying out a portion of the new cemetery in Wetherby Lane, for the Corporation. Mr. C. E. RIVERS, A.M.I.C.E., borough surveyor, Harrogate.

Graham & Sons	£2,800	0	0
Starkey	2,769	4	5
Godfrey	2,717	10	5
Nettleton	2,588	14	11
Naylor & Son	2,548	9	6
Hymas	2,528	6	5
Dickenson	2,360	0	0
E. LONG, Starbeck (accepted)	2,300	0	0

HOLLINGBOURNE.

For erection of a boiler at the workhouse, for the Guardians.

Weeks & Son	£370	5	0
Thompson	340	0	0
Walter	338	10	0
Barden & Head	324	0	0

HUNGERFORD.

For erection of six workmen's cottages, for the Rural District Council.

Hoskings Bros.	£1,366	0	0
Edwards & Son	1,071	10	0
Adams	995	0	0
G. ELMS, Stockcross (accepted)	880	0	0

HUTHWAITE.

For erection of a free library. Mr. E. W. BOSTOCK, architect and surveyor, Huthwaite, Notts.

Amended tenders.

Beckett	£2,189	0	0
Martin	2,181	8	0
Greenwood	2,159	0	0
VALLANCE & BLYTHE, Mansfield (accepted)	2,098	11	5

KETTERING.

For construction of an open-air recovery school on Clover Hill. Messrs. COOPER & WILLIAMS, architects, Kettering.

Riddle	£2,907	0	0
Drever	2,877	0	0
Phillips & Slow	2,817	9	0
Norris	2,760	0	0
Smith, Edmunds & Co.	2,688	0	0
Bamford	2,567	0	0
SMITH & BUNNING, Kettering (accepted)	2,449	0	0
Architects' estimate	2,560	0	0

LONDON.

For erection of a police section house at Ealing, W. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor to the Metropolitan Police, New Scotland Yard, S.W.

Green & Sons	£9,492	13	3
Taylor & Sons	5,390	0	0
Rice & Son	5,370	0	0
F. & H. F. Higgs	5,297	0	0
Messom & Sons	5,200	0	0
Leslie & Co.	5,196	0	0
Potterton	5,195	0	0
Myring Bros.	5,150	0	0
Lole & Co.	5,023	0	0
Adamson & Sons	4,987	0	0
Dickens	4,977	0	0

LYMINGTON.

For the erection of municipal offices in the High Street. Messrs. NEWBY, VINCENT & FINDLAY SMITH, architects, Southampton.

Stevens & Co.	£2,350	0	0
Osman & Co.	2,330	0	0
Bartlett	2,327	0	0
Preston	2,318	10	0
Jenlins & Sons	2,226	0	0
Rushley & Co.	2,183	0	0
S. ELGAR & SON, Lymington (recommended)	2,145	0	0

SCOTLAND.

For erection of a general store at the Springfield Asylum, Cupar.

Accepted tenders.

J. Stark, Cupar, mason and brick work	£532	15	6
A. Thom & Sons, St. Andrews, joiners	394	0	0
A. Williamson & Son, Largo, plasterers	108	11	0
D. Haig, Kirkcaldy, iron	92	13	0
W. Greig, St. Andrews, slater and harling	89	10	0
D. H. Lumsden, Cupar, plumber	81	0	0

WALES.

For the erection of a girls' school and domestic subjects blocks at Troedyrhiw, for the Merthyr Tydfil Education Committee. The BOROUGH ARCHITECT, Merthyr Tydfil.

A. J. COLBORNE, Swindon (accepted) £6,988 0 0

For erection of proposed offices in Courthouse Street, Pontypridd, for the Guardians. Messrs. A. O. EVANS, WILLIAMS & EVANS, architects, Pontypridd.

Herbert & Co.	£10,290	0	0
Shail	9,692	0	0
Griffiths & Sons	9,536	12	5
W. H. Evans	9,480	0	0
D. Davies & Sons	9,353	0	0
Williams & James	9,302	0	0
E. R. Evans & Bros.	9,295	0	0
Howells	9,286	15	0
Jones	9,173	2	5
J. Allen, Ltd.	8,959	5	6
Turner & Sons	8,888	0	0
Jones Bros.	8,558	11	6
KNOX & WELLS, Cardiff (accepted)	8,387	0	0

WEST HAM.

For dispensary and grocery store fittings (joinery work), at the Forest Gate Sick Home, Forest Lane, E., for the Guardians of the West Ham Union. Mr. J. WILLIAMS DUNFORD, architect, 100c Queen Victoria Street, London, E.C.

Griffith Bros.	£219	0	0
Maw, Sons & Son	215	0	0
Tusster	198	0	0
West Bros. & Pettit	189	0	0
Vincent & Co.	185	0	0
Kemp	171	0	0
Sands	168	0	0
Beer & Co.	163	0	0
Sims & Woods	160	0	0
Higgs	158	0	0
Castle Bros. & Co.	152	0	0
Jerram	149	0	0
Webb	147	0	0
Herswill	144	0	0
Hood & Co.	123	0	0
J. W. HOLMES & SON, Catford, S.E. (accepted)	105	0	0

LEE's "All Time" sheet lead and asphalt damp course has been specified and extensively used on the new Southmead Infirmary, near Bristol.

L.C.C. CENTRAL SCHOOL OF ARTS AND CRAFTS.

THE school, which was first opened in temporary premises in Regent Street in 1896, was established by the London County Council to provide instruction in those branches of design and manipulation which bear on the more artistic trades. In September 1908 the school was transferred to the present building, erected by the Council, at the junction of Southampton Row and Theobald's Road.

Thorough training is provided in the arts and crafts, but admission to the courses of instruction in various handicraft subjects is, within certain limits, extended only to those actually engaged in handicraft. Every opportunity is given to students to specialise in relation to their own particular calling. The school is intended to supplement, rather than supersede, apprenticeship by affording to students engaged in London art industries fuller opportunities for design and practice in various branches of their craft than can usually be obtained in the ordinary routine of a workshop.

The instruction given falls into nine main groups, each so far as possible being accommodated on a single floor:—

1. Architecture and the Building Crafts (ground floor and basement).
2. Silversmiths' Work and Allied Crafts (first floor).
3. Book Production (second floor).
4. Cabinet Work and Furniture (third floor).
5. Drawing, Design and Modelling, including Life (third and fourth floors).
6. Needlework (fifth floor).
7. Stained Glass Work, Mosaic and Decorative Painting (fifth floor), including painting in tempera.
8. Day Technical Schools for Boys in—(a) Silversmiths' and Jewellers' Work; (b) Book Production.
9. The Royal Female School of Art. This school, established in 1842, is now under the control of the Council, and has been incorporated in the Central School.

The session is divided into two terms—namely, September 23, 1912, to January 31, 1913, and February 1, 1913, to June 28, 1913. The inclusive fee for the evening classes is £1 1s. a session; but there are reduced fees to journeymen and others, while persons under twenty-one years of age who are bona-fide engaged in trades are admitted free.

The teaching staff in the evening classes for Architecture and the Building Crafts is as follows:—

Architectural design and drawing, S. B. K. Caulfield, F.R.I.B.A., and S. Woods Hill, A.R.I.B.A.; building construction, F. H. Mansford; structural mechanics, P. J. Waldram, F.S.I.; woodcarving, George Jack and F. Stüttig; ironwork, A. W. Elwood; bronze casting, G. Fiorini; shaded drawing, A. D. Davidson.

There will also be classes in letter cutting in stone and inscription carving, and also in ornamental leadwork, provided there are a sufficient number of applicants.

The teaching in the architectural classes is arranged to enable students to qualify for the examination held by the Royal Institute of British Architects and other professional examinations.

SCOTTISH BUILDING TRADES FEDERATION.

THE eighteenth annual meeting of the Scottish Building Trades Federation was held at Inverness last week. Mr. J. Farquharson, Aberdeen, President of the Federation, occupied the chair. There was a representative attendance of delegates. The report for the past year stated that another very quiet year in the building trade had been experienced. Little or no improvement had taken place, and as far as could be ascertained there was no sign of immediate revival. Relations with the operatives had been satisfactory. There had been a general increase in wages throughout the country, due to a great extent to the increased cost of living. Consideration of the working of the Workmen's Compensation Act was taken up with a view to an inquiry to prevent the abuses which had arisen. The subject, also under the consideration of the Industrial Council, as to how far and in what manner agreements which were made between representative bodies of employers and of workmen should be enforced throughout a particular trade or district, was dealt with by the meeting. Other subjects upon the agenda included the consideration of Government contract conditions and sole contracting. The financial report submitted by the Treasurer was approved of, and thereafter the following office-bearers for 1912-13 were appointed:—President, Mr. James Gray, junr., Inverness; Vice-president, ex-Bailie Forrest, Edinburgh. Mr. T. Ferguson, solicitor, Edinburgh, was re-elected secretary and treasurer.

CALCUTTA CITY ARCHITECT APPOINTMENT.

THE Corporation of Calcutta invite applications for the post of city architect and surveyor, on a salary of 1,350 rs., equivalent to about £90, per month, inclusive of travelling and other allowances. The duties of the post will be to (a) design and superintend the construction of all municipal buildings; (b) generally supervise the Building Department and give advice regarding plans to which objection has been taken; (c) personally sanction and check the construction in cases of large and important buildings; (d) control and advise on the general scheme of architecture throughout the town, with a view to securing harmony of design, dealing incidentally with questions of town planning, street improvement, &c.; and (e) to perform the duties incident to his post as municipal surveyor.

The selected candidate will be required to devote his whole time to the duties of his office, and will not be allowed to take up any outside work. He will be required to submit to a medical examination before joining his appointment. The Corporation will pay his passage (first class) from London. He will be required to take up his appointment by about January 1, 1913.

Applications will be received in England by the Hon. Mr. S. L. Maddox, C.S.I., I.C.S., Chairman of the Corporation of Calcutta, East India United Service Club, 16 St. James's Square, London, S.W.

PARIS CHEAP DWELLINGS COMPETITION.

THE city authorities of Paris have, according to *La Construction Moderne*, arranged important separate competitions for the design of two groups of cheap dwellings. The first project deals with a site in the Avenue Emile-Zola, the rue Nouvelle, and the rue de Javel, and which comprises 2,425 square metres; the second site is in the rues Henri-Becque and Brillat-Savarin, and has a superficial area of 1,408 square metres.

The first competition includes five types of dwellings arranged as follows:—

Type No. 1.—An apartment combining a dining-room and a kitchen, or a dining-room and a kitchen separate, a bedroom for the parents, three bedrooms for children, water closet, and hall. The minimum area to be 55 square metres.

Type No. 2.—The same arrangement, but with two children's bedrooms. The minimum area to be 45 square metres.

Type No. 3.—The same arrangement, but with one children's bedroom. The minimum area to be 35 square metres.

Type No. 4.—The same arrangement, but without any children's bedroom. The minimum floor area to be 25 square metres.

Type No. 5.—One room and a small kitchen. The minimum area to be 18 square metres.

The annual rent of these dwellings must not exceed 550 francs, 500 francs, 400 francs, 300 francs, and 200 francs respectively.

The second project is for dwellings comprising at least a common hall which would serve as both a dining-room and a kitchen, and a large room capable of being divided by a partition in order to form two rooms. The minimum area of each dwelling to be 30 square metres. The rent must not exceed 275 francs a year.

The author of the selected project will either be entrusted with the execution of the work or will receive a premium of 15,000 francs for the first competition and 10,000 francs for the second.

In addition, the following awards will be given:—

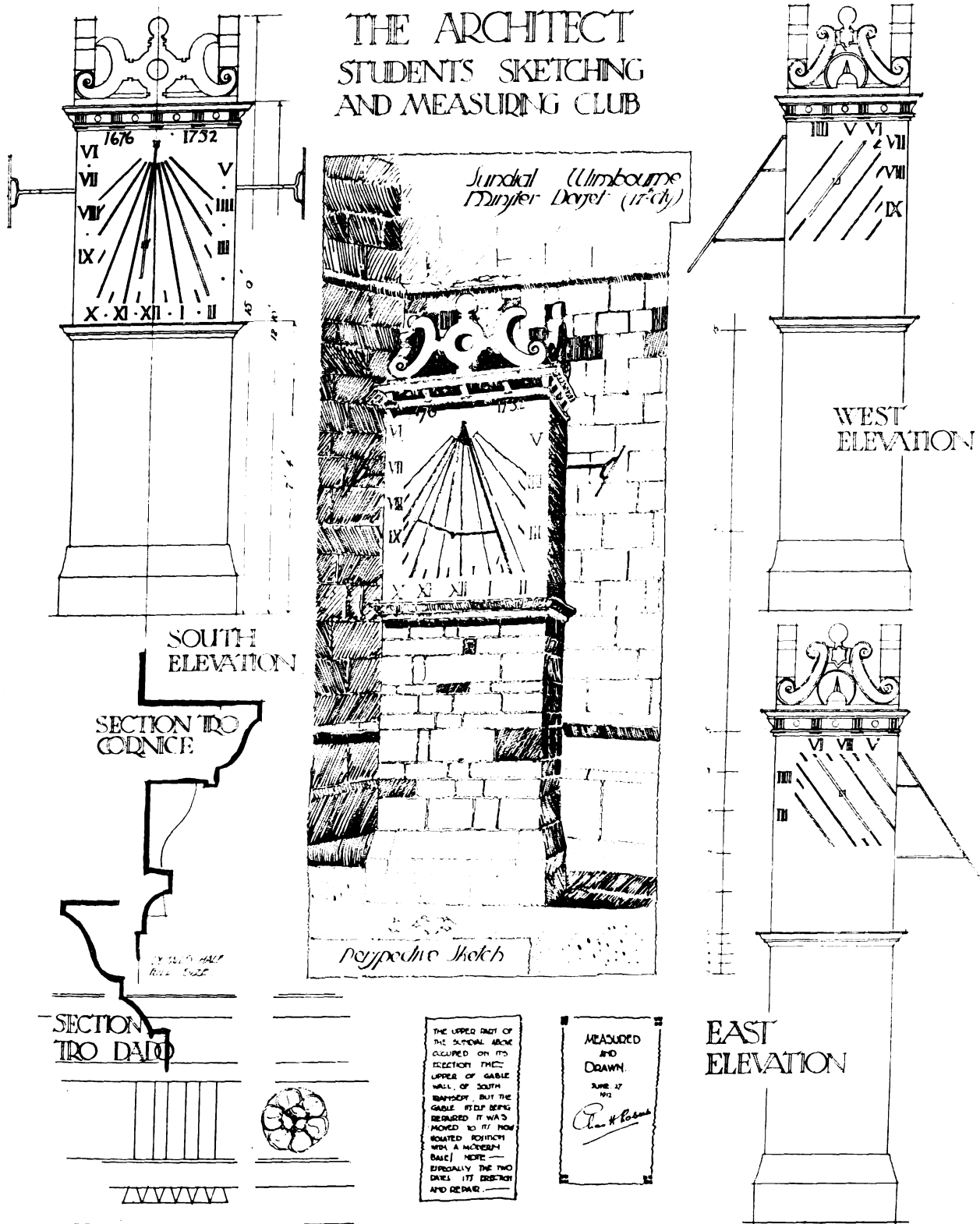
First competition: Second prize, 8,000 francs; third prize, 7,000 francs; fourth prize, 6,000 francs; fifth prize, 4,000 francs.

Second competition: Second prize, 6,000 francs, and three other prizes of 5,000, 4,000, and 3,000 francs respectively.

The competition closes on January 20, 1913.

A PICTURE PALACE, to accommodate about 1,000 people, is to be erected at Leigh, Lancs., in a central position of the town. Building operations will proceed at once. Messrs. J. C. Prestwich & Sons, of Leigh, are the architects.

THE late Mr. D. H. Burnham left a fund of \$50,000 for the establishment of a library of architecture at the Art Institute, Chicago. This was the sole public bequest contained in the will, disposing of an estate estimated at \$1,300,000. The fund will be used by the Art Institute in purchasing books on architecture at its discretion.



RENTS IN PARIS AND MADRID.

An American Consular report says, concerning the rise in Paris rents:—"During the period from 1890 to 1911 the population of Paris increased 455,173, or 19 per cent. During the same time the number of dwellings increased 182,836, or 22 per cent. It would appear at first glance that the number of vacant dwellings must necessarily have increased, but the contrary is true. The number of vacant dwellings in 1890 was 4.62 per cent. of the total number of dwellings in the city; in 1911 it was less than 1 per cent. of the total. This result, which at first seems abnormal, is said to be due to the decrease in the number of deaths and the increase in the number of single men. The great diminution in the number of dwellings is a cause of concern to the inhabitants of Paris, and one of the chief causes of the existing high rents. True, many dwellings are constructed each year in Paris, but the number demolished is almost as great; and, owing to the legal height limit of buildings, there is little or no more room in the new structures than in the old. It

is feared that if the population of Paris should increase in the same proportion—that is, 20,000 per year—and absorb each year, as in the period of 1901-11, 1,500 vacant dwellings, in five or six years there would be no more vacant dwellings, and owing to the natural law of supply and demand the inhabitants of Paris would find themselves facing two alternatives—to submit to the exactions of the property owners, or to move outside the city."

The report mentions that living is more expensive in Madrid than in any other city in Spain. Rents are about 50 per cent. higher, and other things about 25 per cent. This is easily accounted for by the fact that nothing is raised in the vicinity of the city, and that it is the home of practically all the wealthy people of the kingdom. Sanitary conditions in most parts of the city are excellent, and the older portions are rapidly being brought up to date in this respect. Large modern apartments cannot be had under £240 per annum, and there are few at that price. Modest apartments may be had as low as £150, and the most luxurious cost about £1,000.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE.

Northwich.—Model dwellings for Messrs. Brunner, Mond & Co.

CORNWALL.

Lostwithiel.—Territorial Drill Hall, near the Parade.
Trevone.—Mission Church and curate's residence.

CUMBERLAND.

Carlisle.—Bakehouse, Bread Street: additions for Messrs. Carr & Co.

Thirty-nine self-contained dwelling-houses, Duke St. Post Office, Warwick Road.

Warehouse, Nelson Street, for Messrs. Buck & Sons.

Holme Head.—Additions to mills, for Messrs. Ferguson Brothers.

DERBYSHIRE.

Alvaston.—Council Offices.

DEVON.

Newton Abbot.—Hospital: Children's ward for eight beds.

Torquay.—Holy Trinity Church: parish room. Messrs. Watson & Watson, architects.

DORSET.

Poole.—Eleven cottages, Skinner and Pound Streets. Messrs. Bacon & Curtis, architects.

DURHAM.

Brancepeth (North) and Browney.—Council Schools: additions and alterations.

Chester-le-Street.—Infectious diseases hospital: new pavilion (£2,400).

Durham.—Workmen's dwellings.

Easington Colliery.—The Church of Ascension and Church Institute (£450).

Hetton.—Alterations to house, Pemberton Bank, for Mr. Logan.

Seventeen houses, Houghton Road, for Mr. J. Storey.

Alterations to houses, High Street, for Mr. Hudson.

Two houses, Church View Villas, for Mr. Place.

Stables and sheds, for the Co-operative Society.

Houghton-le-Spring.—House and shop, Bankhead, for Mrs. Davison.

Kelloe.—Primitive Methodist Church: vestries, schools, &c. Mr. J. W. Hayes (of Wingate), architect (£500).

Messrs. Regan Brothers (of Trimdon), contractors.

New Herrington.—Two villas, near St. Aidan's Church, for Mr. G. Cairns.

South Shields.—Workhouse, West Harton: extensions.

Mr. J. H. Morton, F.R.I.B.A., architect.

Sunderland.—St. John's Church Institute (£850).

HAMPSHIRE.

Bournemouth.—Congregational Church, Winton. (Accommodation for 650.) £5,000.

House, plot 25, Chessel Avenue, for Mr. J. Wright.

Two houses, plots 27 and 29, Seaward Avenue, for Mr. J. Houston.

House, plot 205, Berwick Road, for Messrs. A. Lambert & Son.

"Cliff Cottage," Wilfred Road: additions for Mr. J. M. Mackelvie.

"Oxford," Wolverton Road: additions for Mr. S. E. Jones.

Yateley.—"The Dog and Partridge" Inn: re-construction.

KENT.

Ashford.—Factory extension, Birling Road, for the Ashford Underwear Company.

Two houses, King's Avenue, for Mr. S. Howland.

No. 26 Albert Road: additions for Mr. W. F. B. Jemmett; also

Two houses, Jemmett Road.

Two houses, Hythe Road, for Messrs. Hinton & Paine.

Lodge, Beaver Lane, for Mr. G. F. Davis.

Leeds.—Three houses, Church Hill.

LANCASHIRE.

Blackburn.—Wesleyan Central Hall (£20,000).

Blackpool.—Public swimming baths: additions (£11,000).

LINCOLNSHIRE.

Louth.—Public Bath (£660).

NORFOLK.

Great Yarmouth.—Receiving Home, near Clarence Road. Messrs. Olley & Haward, A.R.I.B.A., architects.

Thetford.—Workmen's dwellings, Bury Road. Mr. S. J. Wearing, A.R.I.B.A. (of Norwich), architect.

NORTHAMPTONSHIRE.

Kettering.—Co. Exchange, Market Place: alterations. Garage, London Road: additions for the Pytchley Garage Co., Ltd.

Two houses, Kingsley Avenue, for the Industrial Co-operative Society, Ltd.

St. Gabriel's House, Broadway: Memorial Chapel for the Committee.

House, Tresham Street, for Mrs. H. Bosworth.

Offices, Union Street: extension for Mr. S. Patrick.

NORTHUMBERLAND.

Newcastle-on-Tyne.—Jewish Day School.

NOTTINGHAMSHIRE.

Retford.—St. Alban's Church: extension.

SOMERSET.

Taunton.—Twelve workmen's dwellings, String Lane. Borough surveyor.

STAFFORDSHIRE.

Bucknall.—Relief Office for the Stoke-upon-Trent Guardians.

Burton-on-Trent.—Christ Church: restoration (£1,500).

Stafford.—Eight houses, Oxford Gardens, for Mr. W. Skelthorne.

Two houses, Weston Road, for Messrs. Degg & Butters.

One pair of semi-detached villas, Corporation Street, for Mr. H. J. Clay.

Stoke-upon-Trent.—Workhouse Infirmary: Nurses' Home extension and Children's Pavilion.

Wolverhampton.—Messrs. Chubb's Safe Works, Wednesfield Road: extensions.

SURREY.

Richmond.—Dairy, Burdett Road. Messrs. Worsfold & Hayward (of London), architects.

"The Bungalow," Manor Road: additions. Messrs. Brewer, Smith & Brewer, architects; also

House, North Road; and also

No. 18 George Street: addition.

No. 2 St. Helena Terrace: additions for Mr. J. L. Middleton.

Three shops, George Street, for Mr. R. L. Pearce.

Weybridge.—Post Office, High Street and Elm Grove Road. Mr. F. J. Privett (of Southsea), contractor.

SUSSEX.

Bognor.—Sixty-four workmen's cottages.

House, Annandale Avenue, for Mr. Briggs.

Two houses, Nyewood Lane, for Mr. Fulford.

House, Nyewood Lane, for Mr. W. P. Pepper.

Brighton.—Convalescent Home, King's Cliff (£8,000).

Chichester.—Cottage Homes for the Board of Guardians, Stockbridge Road.

Cuckfield.—Workmen's cottages, London Road.

Firle.—Gage Memorial Reading-room.

WORCESTERSHIRE.

King's Heath.—Picture Theatre, Ladypool Road.

Pinvin.—Working-class dwellings.

YORKSHIRE.

Barnsley.—Municipal Offices and Town Hall, Church Street.

Leeds.—Municipal Offices.

WALES.

Llandudno.—Petty Sessions House and Police Headquarters, Oxford Road (£5,000).

Neath.—Conversion into business premises at Melincrythan, for the Briton Ferry Co-operative Society. Mr. H. A. Clarke (of Briton Ferry), architect.

Port Talbot.—Nine houses, Abbey Road, for Mr. A. James.

Six houses, Taibach, for Mr. W. Miles.

Ruthin.—Infirmary for the Workhouse.

SCOTLAND.

Cathcart.—School for defective children, Craig Road. Four tenements, Rannoch Street.

Dundee.—Royal Infirmary: Porter's Lodge and other works (£1,800).

Giffnock.—Villa, Greenhill Avenue, for Messrs. George Dixon & Sons.

Glasgow.—Theatre de Luxe, 421 Sauchiehall Street: additions and alterations.

Greenock.—Two hundred workmen's houses.

Hamilton.—Municipal Offices (£13,000).

Johnstone.—Public School, Elderslie: additions for the Paisley Landward School Board.

Kirkwall.—St. Magnus' Cathedral: restoration (£35,000).

SCOTLAND—continued.

Newton Mearns.—Public School: additions.
Pollokshaws.—Three tenements, Factory and M'Arthur Streets (£9,000).
Port Glasgow.—Fourteen tenements, Mary Street.
Saltcoats.—Ayrshire Consumptive Sanatorium: extension for twenty additional beds (£2,100).
 Theatre for 1,000 sittings, Hamilton Street (£2,000).
Wick.—Slaughter-house, Green Road (£1,700).

IRELAND.

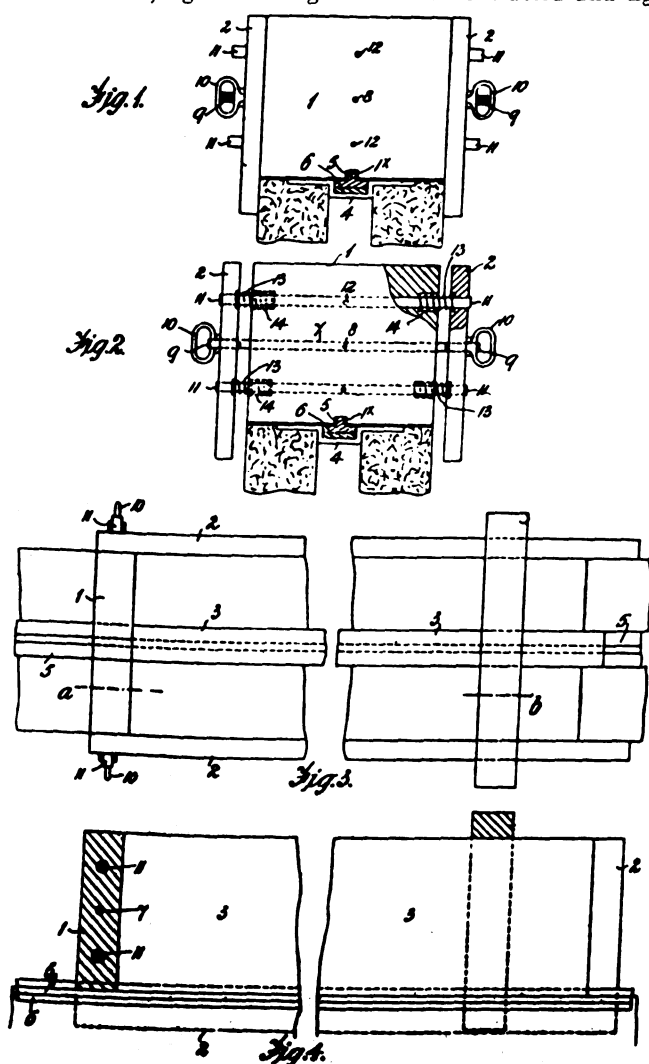
Bray.—Working-class dwellings (£10,000).
Lismore.—Roman Catholic Church, Ballysaggart.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 18,384. Aug. 14, 1911.—Improvements relating to the building of concrete, cement, and like walls. William Calway, managing director of the Building and Estates Development Co., Ltd., 40 Archfield Road, Bristol. The inventor has before proposed to use for the purpose of constructing a concrete, cement, or like wall *in situ* and step by step a mould consisting of a stationary end-plate and side cheeks adapted to be expanded from and contracted towards said end-plate parallel to one another. In this invention a mould is used consisting of the above-mentioned essential parts, but the shape of the core is modified so that iron bonds or wall ties can be used. Figs. 1 and 2 are end views of a mould, fig. 1 showing the mould contracted and fig. 2



the mould expanded. Fig. 3 is a plan of said mould, and fig. 4 is a vertical section, on the line a-b of fig. 3, showing the shape of core now proposed to be used; 1 is the stationary end-plate of the mould, and 2 are the side-cheeks which are adapted to be expanded from and contracted towards the end-plate 1 parallel to one another. 3 is a core secured to the stationary end-plate 1. The core 3 is made of rectangular

shape, as shown in fig. 4. Iron bonds or wall ties 4, which are dropped at their central parts so as to accommodate a guide rail 5 and its timber support 6, are incorporated with the wall, thus enabling transverse concrete bonds to be dispensed with. The core 3, which would during the building of the different courses bear with its bottom edges against the edges of the cavities formed in the walls, is provided on its bottom face with a longitudinal groove for the accommodation of the upstanding web of the guide rail 5, and the end-plate 1 is cut away at 1x for the same purpose. In the case of walls of certain thicknesses two or more cores would be used. 7 is a rod which is passed through and fixed to the centre of the stationary end-plate 1 by means of a pin 8, and is provided at its ends with screw threads 9. 10 are nuts of loop shape, engaging with the screw threads 9 and bearing against the outer faces of the side-cheeks 2. 11 are plain rods which are secured by means of pins 12 to the end-plate 1 and, passing through corresponding holes formed in the side-cheeks 2, serve as guides for ensuring movement of the side-cheeks 2 parallel to one another. 13 are coiled springs which are housed in recesses 14 provided in the end-plate 1 and press against the side-cheeks 2, and thus constantly tend to expand or move towards the side-cheeks 2. Aug. 14, 1912.

PATENT SPECIFICATIONS PUBLISHED
 SEPTEMBER 12, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

- No. 18,511. Aug. 16, 1911.—R. H. Hutchinson, 98 Leith Mansions, Maida Vale, N.W. Footlight floats and the like theatre lighting appliances.
 24,668. Nov. 6, 1911.—William Schmahl and Magic Appliances, Ltd., both of 6 Farringdon Avenue, E.C. Electrically operated portable vacuum cleaners.
 27,862. Dec. 12, 1911.—Edgar Booth, 9 Heath Villas, Halifax, and N. R. Booth, 44 Manor Heath Road, Halifax. Series systems of incandescent lamp lighting.
 18,936. Aug. 23, 1911.—Date claimed under International Convention Aug. 30, 1910. Blaugas Patentgesellschaft, m.b.H., Augsburg, Germany. Manufacture of liquid illuminating gas.
 19,031. Aug. 24, 1911.—Sir Bradford Leslie, K.C.I.E., 5 Chester Gate, Regent's Park, N.W. New drawbridge.
 19,041. Aug. 24, 1911.—R. H. Hillman, 14 Vanguard Terrace, Keyham, Devonport. Automatic closing apparatus for doors and casements.
 19,867. Sept. 6, 1911.—A. W. Rammage, 59 Schubert Road, East Putney. Concrete building construction.
 19,945. Sept. 7, 1911.—Bartholomew Downey, Marshfield Wood, Wisconsin, and Chas. Haslow, Marathon, Wisconsin, U.S. Combined door checks and latches.
 20,152. Sept. 11, 1911.—F. B. Comins, 120 Franklin Street, Boston, Suffolk, Mass., U.S. Apparatus for controlling humidity.
 20,342. Sept. 14, 1911.—G. St. John Day, Mumps Electrical Works, Oldham. Conjunction of cords or wires with electrical apparatus.
 20,619. Sept. 18, 1911.—H. J. Jarrett, Maitland, South Australia. Rivets.
 20,718. Sept. 19, 1911.—John Ball, 4 Crossley Terrace, Liverpool Road, N. Electric shade carrier tongs.
 21,572. Sept. 30, 1911.—Edgar Rhodes, The Briars, Scholes, near Leeds, and the Romapac Tramway Construction Co., Ltd., 2 East Parade, Leeds. Machines for fixing and cutting off the upper or wearing portions of combined tramway rails.
 21,671. Oct. 2, 1911.—Leonard Percival, 762 C. St. Tacoma, Washington, U.S. Locks or latches.
 21,772. Oct. 3, 1911.—J. R. Quain, Dacre House, Victoria Street, S.W. Alarms for preventing theft.
 22,183. Oct. 9, 1911.—John Berry, 106 Pitt Street, Oldham; W. T. Glover, 37 Grasmere Road, Oldham; and Meters, Ltd., 6 Mawson Chambers, Deansgate, Manchester. Valves for controlling gas and other fluids.
 23,204.—Oct. 20, 1911.—J. H. Woolliscroft, Shanklin, Grosvenor Avenue, Great Crosby, Liverpool. Door or gate checks.
 24,017. Oct. 30, 1911.—Leonard Newitt and F. P. Fletcher, both of H.M. Dockyard, Chatham. Electrical heating or cooking apparatus.
 1,466. Jan. 18, 1912.—C. A. Brinley, 247 South Sixteenth Street, Philadelphia. Pulleys.
 5,987. Oct. 5, 1911.—Copeman Electric Stove Co., Flint, Michigan, U.S. Controlling means for electric cooking apparatus.

NEW LONDON SHOWROOMS.

To the fact that still with most people "seeing is believing" London owes not a negligible part of its present commercial importance. It may not now be necessary for the detailed processes of industry to be executed under the eye of the purchaser, but it is necessary for its results to be on view. Without her showrooms London would certainly lose much of her attractiveness, and sink back into a kind of monstrous parochialism. Fortunately, there is no fear of that, for the metropolis is yearly becoming more and more the world's market place and business depot. A representative in London has for long been an essential part of every progressive British firm; nowadays such a representative is usually supported by a showroom. That simple process of development has been followed by Messrs. Hartley & Sugden, Ltd., of Halifax, who have just changed their office in Queen Victoria Street, E.C., for excellent showrooms and offices conveniently situated at 61 Great Portland Street, W. Here they are now prepared to talk "heating" business to architects, engineers and contractors, and also to initiate the layman into the mysteries of this branch of engineering.

The firm have been making boilers for a very large number of years. Their success is to some degree attested by the sixty-five gold and silver medals awarded to them, to a still further degree by the long lists of contracts they have executed, and most of all by their high reputation among their own craft. The "White Rose" cast-iron sectional boiler was, if we remember right, first put on the market nearly ten years ago. It commenced with Series "A," and has now reached Series "M 2." It is claimed that each possesses maximum heating powers, with a minimum consumption of fuel. Series "M 2" is an ingeniously arranged low-pressure steam boiler which if of four sections has a heating power, direct radiation, of 525 square feet, and if of nine sections gives 1,275 feet of radiation. These figures are considerably excelled by Series "H."

Various types of independent boilers for hot water supply are on view. Messrs. Hartley & Sugden are makers of range boilers; but they strongly advocate that where installed the ordinary range boiler should be removed, the cavity bricked up, and an independent boiler substituted. Among the types shown are the "Savile," "Malvern," "Vedette," and the "Domestic Heater." These cater for small as well as large installations from 38 to 2,240 gallons per hour.

The visitor to 61 Great Portland Street should be careful not to leave before inquiring into the small apparatus actually heating the showrooms. It has not yet received a name, but doubtless will soon do so—we would suggest "The Success." On the ground floor is an unobtrusive boiler (which may also be used as an open fire) from which are fed radiators in the basement below, as well as on the same floor, or as high as is necessary. The boiler will burn from ten to fifteen or even twenty hours without attention; it fits in the same size opening as the previous small register grate, and its pipes, of half the usual diameter, satisfactorily heat four good-size radiators. All this is accomplished by a patent arrangement in the water tank.

MR. J. CAMPBELL REID, A.R.I.B.A., late lecturer in the Technical College, Paisley, was entertained last week to a complimentary dinner in Glasgow. Mr. Reid has received an appointment as chief of the architectural section of the Northern Polytechnic Institute, London, and left on Saturday last to take up his new position.

A START has been made this week with the new sewerage scheme, which is to embrace all the Matlocks, Cromford, and adjacent districts, the commencement being at the outfall works, which are three miles below Matlock, near Lea. The scheme is to cost over £40,000.

THE Titan Lift Co., Ltd., will on and after Monday next have their offices at 9-11 Eagle Street, Holborn, W.C. A move from their former premises has been rendered necessary by the increase of business. In their new premises a Titan lift has been installed, running from the bottom to the top storey.

WE announce with regret the death in his seventy-seventh year of Mr. George S. Guy, which took place at his residence, "Rose Bank," Great Malvern, on Saturday last. Mr. Guy was chairman of Messrs. James Russell & Sons, Ltd., Crown Tube Works, Wednesbury. The deceased was a county magistrate for Staffordshire, and was for many years a member of the Staffordshire County Council.

VARIETIES.

THE Bradford Corporation Libraries, Art Gallery, and Museums Committee recommend the Council to acquire a site for a branch library in the Otley Road district.

A GERMAN firm of silk manufacturers are negotiating for a site of about nine acres at Beverley, on which they intend to erect mills.

THE Buxton Lime Firms Co. propose to erect extensive cement works between Dove Holes and Peak Forest for the manufacture of cement out of the waste product from the lime works.

MR. ROBERT CAMM, Mr. Walter H. Camm, and Miss Florence Camm are continuing the business in stained glass and mosaics carried on for many years by Mr. Thomas William Camm at Smethwick, Birmingham.

MESSRS. TENNANT & BARRS, engineers, Newcastle, have prepared a scheme for the installation in the Scarborough workhouse of hot water heating and service systems upon the centralised system, and electric lighting installation, and for installing of a water-softening plant at the laundry. The scheme, which is estimated to cost £5,150, has been deferred.

THE proposal to extend the Batley Electricity Works, at a cost of about £20,000, has given rise to much controversy. A strong section of the Town Council are in favour of buying current from the Yorkshire Power Company rather than incur new capital expenditure on generating plant. The Electricity Committee are going to call in an independent adviser.

H.M. TRADE COMMISSIONER for South Africa reports that the Johannesburg Municipal Council, having at their disposal for the purpose of building an art gallery £36,168 out of the £110,000 required, have now agreed to tenders being invited for the erection of two wings at a cost of £30,000, or of three wings at a cost of £45,000.

THE Orsett (Essex) Rural District Council invite competitive scheme or schemes for proposed sewerage and sewage disposal for the parish of South Ockendon. The population of the parish (1911) is 1,330. Assessable value for special expenses, £3,705. The Council offer premiums of £50 for the scheme placed first and £25 for the scheme placed second by the assessor, who has been nominated by the Institution of Civil Engineers. Conditions can be obtained from Mr. J. Beck, clerk, 2 Orsett Road, Grays, and schemes must be delivered to him not later than January 1.

MR. GEORGE WILSON, architect, of Messrs. Sydney Mitchell & Wilson, Young Street, Edinburgh, died on the 16th inst. at St. Andrews. Mr. Wilson had been in indifferent health for some time. He was long and honourably associated with the profession in Edinburgh, first in the capacity of assistant to Sir Rowand Anderson, and later as partner with Mr. Sydney Mitchell, with whom he co-operated in carrying out the numerous works undertaken by that firm. During the past few years he did not take an active part in business matters.

THE Roscrea No. 1 Rural District Council invite experienced sanitary engineers to submit plans, specifications, and estimates of a complete sewerage system for the town of Roscrea by November 1. Should the Council, after full consideration of the plans and of the estimates of the proposed sewerage scheme, decide not to undertake same, twenty guineas will be paid for the best plan, &c. Should the Council decide to proceed with the work, the twenty guineas mentioned will not be paid, but the engineer who submits the approved plan, &c., will be employed as engineer at a remuneration of 5 per cent. on the total contract. The employment, of course, will be subject to the sanction of the Local Government Board.

IN Liverpool, as in many other centres, there has been for some months past considerable dissatisfaction among certain sections of men engaged in the building trade. Negotiations have been in progress between the Liverpool Master Builders' Association and the District Committee of the Navvies, Builders' Labourers, and General Labourers, and have, after two conferences, just terminated in a manner satisfactory to both sides. The men, according to the *Liverpool Courier*, have gained increases in the rates of pay, and rules have been fixed for the payment of overtime at advanced rates. A minimum of 6d. an hour for navvies and labourers has been agreed upon, and overtime is to be paid at the rate of time and a quarter for the first four hours and time and a half afterwards. Work done on Saturday afternoons is to be paid for at the rate of time and a quarter for the first two hours, time and a half till Saturday midnight, and double time to 6 A.M. on Monday. Christmas Day, Good Friday, and Bank Holidays count as Sundays, double time being paid.

THE Architect and Contract Reporter.

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AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made. Subscription, \$5.20.

AGENTS FOR AUSTRALIA, NEW ZEALAND, TASMANIA AND CANADA.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

. As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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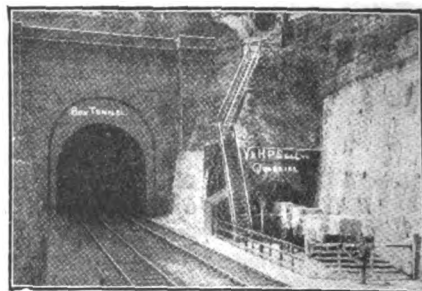
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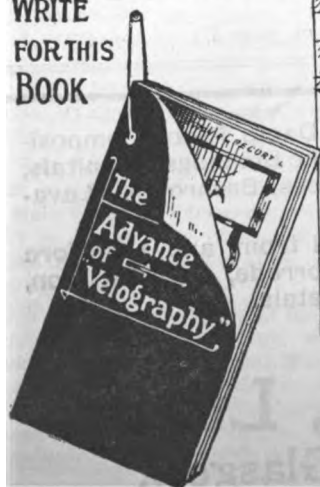
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GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Sept. 30.—The Llanelly Education Committee invite competitive designs and estimates for erection of boys', girls', and infants' school buildings for over 1,000 children, and also a domestic subjects centre, at Stebon Heath Terrace, Llanelly. Mr. G. E. Halliday, F.S.A., F.R.I.B.A., Castle Street, Cardiff, will act as assessor. Full particulars of the competition will be issued on sending application and £3 3s. deposit to Mr. Ifor W. Watkins, clerk, Education Offices, Colleshill Terrace, Llanelly.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ALTRINCHAM.—Oct. 7.—For the erection of a public convenience in Kingsway. Mr. H. E. Brown, surveyor, Town Hall, Altrincham.

ASHTON-UNDER-LYNE.—Oct. 17.—For the erection of an elementary school to accommodate 400 children at Waterloo. Deposit £2. Mr. Henry Littler, county architect, 16 Ribblesdale Place, Preston.

BIRKENHEAD.—Oct. 7.—For the construction of a gallery in the swimming bath at the Argyle Street South Baths. Deposit 5s. Mr. C. Brownridge, M.I.C.E., borough engineer and surveyor, Town Hall, Birkenhead.

BOUGHTON HEATH.—Oct. 4.—For alterations and additions to the workhouse, Boughton Heath, Chester, for the Guardians of Tarvin Union. Deposit £1 1s. Messrs. John H. Davies & Sons, architects, 14 Newgate Street, Chester.

BOWDERDALE.—Oct. 10.—For alterations to the farm-house, Bowderdale, Wasdale, Cumberland. Deposit £2 2s. Mr. J. H. Rea, Gatehouse, Eskdale, Cumberland.

BURRATON AND ST. MELLION.—Oct. 9.—For the erection of five workmen's cottages near Burraton and St. Mellion, Cornwall (two separate tenders), for the St. Germans Rural District Council. Deposit £2 2s. Mr. H. A. Hosking, architect, Landrake.

CATTON.—Oct. 2.—For the alterations and additions to Catton Council School (full tenders), for the North Riding of Yorkshire County Council Education Committee. The School, and Mr. J. C. Wrigley, secretary, County Education Offices, Northallerton.

CHALLOW.—Oct. 8.—For the erection of a cottage at Challow Station, Berkshire, for the Great Western Railway Co. The Engineer, at Bristol Station.

CHORLEY.—Oct. 14.—For renovating the Independent Methodist Church. Mr. A. Bennett, secretary, 99 Eaves Lane, Chorley.

CLEVEDON (SOMERSET).—Oct. 8.—For erection of a stable at Clevedon Station, Somerset, for the Great Western Railway Co. The Engineer at Bristol Station.

EARL SHILTON.—Oct. 4.—For the erection of a handicraft centre, for the Leicestershire County Council Education Committee. Deposit £5 5s. The Architect, 33 Bowling Green Street, Leicester.

FARNWORTH.—Oct. 1.—For an extension to the piggeries at the workhouse, Fishpool, Farnworth, for the Guardians of Bolton Union. Mr. J. Ward, architect, 24 Mawdsley Street, Bolton, Lancs.

FEATHERSTONE.—Oct. 4.—The West Riding Education Committee invite whole or separate tenders for the following works at North Featherstone Lane Council School—viz.: Alterations (builder and joiner). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

GRIMSBY.—Oct. 4.—For the enlargement of Grimsby telephone exchange, for the Commissioners of H.M. Works and Public Buildings. The Postmaster at Grimsby Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

HARROGATE.—Sept. 30.—For the work required in erection of boundary walls to the new cemetery, Wetherby Lane; also for supply and fixing of wrought-iron unclimbable fencing, ornamental gates, and railings in connection therewith, for the Harrogate Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer and surveyor, Harrogate.

HARROGATE.—Sept. 30.—For the combined trades of mason, plasterer, joiner, glazier, and painter for the work required to the new annexe, Royal Pump Room; also for the redecoration of the central hall and Turkish baths at the Royal Baths, for the Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer and surveyor, Harrogate.

HENDON.—Oct. 21.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3s. Mr. G. Hornblower, F.R.I.B.A., 2 Devonshire Terrace, Portland Place, London, W.

HENDON.—Oct. 21.—For erection of central fire station at The Burroughs, for the Hendon Urban District Council. Deposit £3 3s. Mr. H. A. Welch, 20 Golder's Green Parade, Golder's Green, Hendon.

HEPTONSTALL.—Oct. 18.—The West Riding Education Committee invite whole tenders for the following work at Heptonstall Council School—viz.: Playground. The Education Architect, County Hall, Wakefield.

HERNE BAY.—Oct. 16.—For erection of a pavilion and concert hall on the East Cliff, for the Urban District Council. The Surveyor, Town Hall, Herne Bay.

HUDDERSFIELD.—Sept. 30.—For erection of new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Huddersfield Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

ILMINSTER.—Oct. 7.—For partial rebuilding in masonry and repair of Ilton two bridges on the main road between Ilminster and Langport at two miles from Ilminster, for the County Works Committee. The work comprises taking down and rebuilding one arch 10 feet span, rebuilding wing and fence walls, roadworks, &c. Deposit £2 2s. The County Surveyor's Office, Wells, Somerset.

IRELAND.—Oct. 3.—For the erection of chalets at their sanatorium, Crooksling, Co. Dublin, for the Dublin Joint Hospital Board. Mr. T. D. Fitzgerald, secretary, 24 Suffolk Street, Dublin.

IRELAND.—Oct. 7.—For alterations and additions to their Locomotive Department Offices at Dundalk, for the Great Northern Railway Co. (Ireland). Deposit £2 2s. Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

IRELAND.—Oct. 8.—For alterations and additions to the General Post Office, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Oct. 10.—For erection and furnishing of National school buildings at Drumclugh, Bantry, co. Cork. Bantry Royal Irish Constabulary Barrack.

IRELAND.—Oct. 10.—For erection and furnishing of National school buildings at Coomhola, Bantry, co. Cork. Bantry Royal Irish Constabulary Barrack.

IRELAND.—Oct. 15.—For erection of the following dwellings: (1) Forty-four three-room houses, in three blocks; (2) twenty two-room houses, in two blocks; (3) one four-room house, together with construction of roads, paths, water mains, sewers, &c., at Bray. (Mr. P. H. McCarthy, B.E., architect, 39 Westmorland Street, Dublin.) Send £2 2s. deposit to Mr. P. MacDonnell, clerk, Town Hall, Bray.

KIRKDALE.—For the erection of an electric theatre, to be built on a site Nos. 21 to 31 Marsh Street, in the Saracenic style, for Mr. W. Hutchinson under the supervision of Mr. J. H. McGovern, architect, 26 North John Street, Liverpool.

LONDON.—Oct. 1.—For erecting a training college and one hostel, and also adapting an existing house for a hostel on the Furzedown site, Tooting, S.W., for the London County Council. The Superintending Architect's Department (Room 74), 19 Charing Cross Road, W.C. Send £5 deposit to the Cashier of the Council at County Hall.

LONDON.—Oct. 1.—For erection of dwarf walling and iron railings at the Home for Aged Poor, Eldon Road, West Norwood, S.E., for the Lambeth Board of Guardians. Deposit £2. The Guardians' Board Room and Offices, Brook Street, Kennington Road, S.E.

LONDON.—Oct. 5.—For the excavations, foundations, and retaining walls of new buildings in Millbank, for the Crown Agents for the Colonies. Send names, together with references of two architects under whom applicants have recently executed works, to Messrs. J. W. Simpson & Maxwell Ayrton, architects, 3 Verulam Buildings, Gray's Inn Road, London, W.C.

MARKET HARBOROUGH.—Oct. 4.—For the erection of a handicraft centre for the Leicestershire County Council Education Committee. Deposit £5 5s. The Architect, 33 Bowling Green Street, Leicester.

MIDDLESBROUGH.—Oct. 4.—For enlargement of Middlesbrough post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Middlesbrough Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

NORTHAMPTON.—Sept. 28.—For erection of (1) drill hall and alterations to the militia stores; (2) riding school for the Northamptonshire Territorial Force Association. Send names by Sept. 28 to Major J. W. Fisher, architect, Wellingborough.

PONJERAVAH.—Oct. 12.—For proposed alterations and improvements to the Ponjeravah Council School, for the Cornwall Education Committee. Mr. S. Hill, architect to the committee, Green Lane, Redruth.

PURLEY.—Oct. 10.—For erection of Purley new telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Croydon General Post Office and H.M. Office of Works, &c., Storey's Gate, S.W.

REDCAR.—Oct. 2.—The North Riding of Yorkshire County Council Education Committee invite full tenders for erection of a cookery and manual instruction room at West Dyke Council school. Mr. Mennell, Cleveland District Education Office, Redcar.

RUTHIN.—Oct. 12.—For the erection of four workmen's dwellings on the south side of Mwrog Street. Mr. J. Rice Jones, borough surveyor, Town Hall, Ruthin.

SCOTLAND.—Sept. 30.—For supplying a greenhouse at the Beveridge public park, for the Kirkcaldy Town Council. The Burgh Surveyor's Office, Kirkcaldy.

SCOTLAND.—Oct. 1.—For mason, carpenter, slater, plaster, plumber, painter, and glazier works of house, Queen Street, Buckie. Mr. J. Green, draper, High Street, Buckie.

SCOTLAND.—Oct. 2.—For the following works in connection with alterations at the Heriot-Watt College, Edinburgh, to provide new chemical laboratories—viz: Mason work, carpentry and joiner work, plaster work, plumber work, and painter work, for the Governors of the George Heriot's Trust. Mr. J. Anderson, superintendent of works, 20 York Place, Edinburgh.

SCOTLAND.—Oct. 2.—For (1) excavator, mason and brick works; (2) carpenter and joiner works; (3) steel work; (4) slater work; (5) plumber work; (6) plaster and concrete works; (7) tile work; (8) glazier work; (9) furniture; (10) iron railings and gates; (11) heating installation; (12) electric lighting; (13) painter work required in connection with the erection of Finnart school, for the Greenock School Board. (Mr. W. R. Glen, architect, Glasgow.) Deposit £1 for each schedule. Mr. A. F. Niven, clerk, Municipal Buildings, Greenock.

SCOTLAND.—Oct. 3.—For the construction of a reinforced concrete raft foundation for the Dundee new Labour Exchange. Tenders are required for the whole work and not for separate trades. Deposit £1 1s. H.M. Office of Works, 3 Parliament Square, Edinburgh.

SCOTLAND.—Oct. 5.—For the following works required in connection with the proposed construction of the public convenience at Eglinton Toll, Pollokshaws Road, Glasgow—viz., (1) mason, brick, joiner, &c., works; and (2) sanitary fittings. The Office of Public Works, City Chambers, 64 Cochran Street, Glasgow.

SOUTHAMPTON.—Oct. 2.—For alterations and additions to "D" warehouses, Town Quay (a small general building job), for the Harbour Board. Deposit £1. Mr. E. Cooper Poole, A.M.I.C.E., engineer to the Board, Southampton.

SOUTHEND-ON-SEA.—Oct. 2.—For erection of pumping station and destructor buildings, inclined roadway, two cottages, and other works at the sewage disposal works, Prittlewell. Deposit £5 5s. Mr. E. J. Elford, M.I.C.E., Municipal Buildings, Clarence Road, Southend-on-Sea.

SOUTHPORT.—Oct. 3.—For the extension of the South Marine Gardens including the continuation of the Lake Promenade, and of the concrete wall round the Marine Lake, &c., for the Parks, Foreshore and Cemeteries Committee. Deposit £2 2s. The Borough Surveyor's Office, Town Hall, Southport.

STOCKPORT.—Sept. 30.—For the labour and materials required in taking down one of the bays of the covered market, and incidental works, for the Tramways Committee. Mr. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

SYNDALE.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with alterations to Featherstone, Syndale, Council School—viz.: Builder, joiner, plumber. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

TALYWAIN.—Sept. 30.—For erection of a hall in connection with St. Thomas's Church, Talywain, Mon. Messrs. Lougher & Co., architects, Bank Chambers, Pontypool.

TIPTON.—Oct. 9.—For erection of a Council School and caretaker's house at Princes End, Tipton (the school to accommodate 640 children), for the Tipton Education Committee. Send applications and £3 3s. deposit by Sept. 30 to Messrs. Scott & Clark, architects, Market Street, Great Bridge, Tipton, and Lower High Street, Wednesbury.

TWYFORD.—Oct. 3.—For erection of six cottages at Twyford, Bucks., for the Buckingham Rural District Council. Mr. L. Bell, surveyor, Council Offices, Buckingham.

WALES.—Sept. 30.—For erection of officials' houses at Britannia Pits, Pengam, for the Powell Duffryn Steam Coal Co., Ltd. Mr. G. Kenshole, M.S.A., Station Road, Bargoed.

WALES.—Oct. 1.—For erection of additional offices at the warehouse, Tredegar, for the Guardians of the Bedwelly Union. Deposit £1 1s. The Guardians' Offices at the Warehouse, Tredegar, or Messrs. James & Morgan, F.F.R.I.B.A., architects, Charles Street Chambers, Cardiff.

WALES.—Oct. 2.—For erection of four houses at Cwm-rhydyceirw, near Morriston, Glamorganshire, for the Great Western Railway Co. The Engineer at Neath Station.

WALES.—Oct. 5.—For the erection of fifteen pairs of semi-detached villas, together with the construction of roads, sewers, surface-water drains, on the Meyrick estate, Merthyr Tydfil, for the Meyrick Building Club. Mr. T. E. Rees, architect, Bank Chambers, Merthyr Tydfil.

WALES.—Oct. 8.—For the following works, for the Great Western Railway Co.: (1) Erection of stores and offices at Neath; (2) erection of stores and messrooms at King's Dock, Swansea; (3) provision of lavatory accommodation in the goods offices at Swansea. The Engineer at Neath Station.

WALES.—Oct. 3.—For extensive alterations to the Fox and Hounds Hotel at Ogmere Vale, for the Rhondda Valley Breweries Co., Ltd. Deposit £2 2s. Mr. T. J. Evans, architect, The Court, Pencoed, or at 6 Arcade Chambers, High Street, Cardiff.

WALES.—Oct. 9.—The Urban District Council of Rhyl are prepared to receive tenders for the following:—Contract No. 2, comprising the construction of workshop; the providing, erecting and setting to work of a centrifugal pump driven by gas engine for dealing with storm water; alterations to existing buildings, works in connection with existing 18-inch outfall sewer, together with other works. Deposit £5. Mr. Baldwin Latham, M.I.C.E., Parliament Mansions, Victoria Street, Westminster, S.W.

WALES.—Oct. 10.—For erection of a gauger's cottage and stores at Dolgarrog, Carnarvon, for the Conway and Colwyn Bay Joint Water Supply Board. Mr. T. B. Farrington, engineer, Trinity Square, Llandudno.

WELLS.—Oct. 4.—For additions and alterations at the Girls' Blue School, in Portway. Deposit £1 1s. Mr. A. J. Pictor, A.R.I.B.A., architect, Bruton, Somerset.

WRELTON.—Oct. 2.—The North Riding of Yorkshire Education Committee invite full tenders for alterations and improvements to the Council School. Mr. J. C. Wrigley, secretary, County Education Offices, Northallerton.

TENDERS.

BIRMINGHAM.

For the erection of a special school in Bristol Street, for the Education Committee, to accommodate 150 children.

CRUMP, Droitwich (recommended) . . . £4,370 0 0

For the erection of buildings in further extension of the Council House (second extension contract). Messrs.

H. V. ASHLEY & WINTON NEWMAN, architects, 14 Gray's Inn Square, London, W.C. Quantities by Mr. ANTHONY ROWSE, Birmingham, and Mr. HUGH WATKINS, 13 Gray's Inn Square, W.C., joint quantity surveyors.

Sapcote & Sons . . . £65,315 0 0

Cubitt & Co. . . . 64,964 0 0

Bishop 63,972 0 0

Willcock & Co. . . . 62,836 0 0

Elvins & Sons 59,940 0 0

H. Lovatt, Ltd. . . . 59,864 0 0

Bowen & Sons 59,134 0 0

Minter 58,734 0 0

J. BAENSLEY & SONS, Birmingham (accepted) 57,058 0 0

BRADFORD.

For works required in erection of a spinning mill, engine-house, and boiler-house. Mr. A. T. VERITY, architect, Birkenshaw, Bradford.

Accepted tenders.

Waterhouse & Sons, masons and joiners, Bradford.

Fairburn & Sons, plumbers and painters, Drightlington.

Roberts & Co., ironfounders, Bradford.

Sellars Bros., plasterers, Cleckheaton.

Smithies, slater, Bradford.

CABBAGE HALL.

For repairs and decorations to All Saints Presbytery, Oakfield, for the Rev. Wm. Gregson, rector. Mr. J. H. MCGOVERN, architect, Liverpool.

HALL & JAMIESON (accepted) . . . £109 15 0

CHESTER-LE-STREET.

For the erection of the new bridge over the Wear at Little Lumley.

BAINS & Co., Newcastle (accepted) . . . £9,916 0 0

For making the roads in connection with the above.

THOMPSON & SON, Chester-le-Street (accepted) £4,597 10 2

COVENTRY.

For the extension of the market, for the City Council.

JONES & BACON, Coventry (accepted) . . . £2,333 9 6

GRIMSBY.

For the erection of a Council School in Victoria Street, for the Education Authority. Mr. H. S. SCAPING, architect, Grimsby.

J. H. THOMPSON & SONS, LTD., Grimsby (accepted) . . . £13,333 0 0

HARROGATE.

For the whole of the work in connection with building the Theosophical Society's hall and lodge premises in East Parade. Mr. J. E. REID, Lic.R.I.B.A., architect, Heworth, York.

Lee £1,359 11 0

Birkinshaw 1,294 18 6

Taylor 1,293 0 0

Allen & Son 1,265 0 0

Dawson & Son 1,250 0 0

Rhodes Bros. . . . 1,233 6 7

Godfrey 1,209 15 3

C. A. NETTLETON, Harrogate (accepted) . . . 1,149 0 0

ITCHEN.

For private street works, for the Urban District Council. Mr. T. A. COLLINGWOOD, surveyor, Itchen.

Streeter & Co. . . . £1,685 10 11

Osman & Co. . . . 1,631 16 8

GROUND & NEWTON, Bournemouth (accepted) . . . 1,587 0 0

LIVERPOOL.

For alterations to auction galleries, 60 Hanover Street, for Messrs. Branch & Leite. Mr. J. H. MCGOVERN, architect, Liverpool.

BULLEN BROS. & SONS (accepted) . . . £453 0 0

LONDON.

For alterations, additions and repairs to Newcomen Foundation Schools and caretaker's quarters, corner of Newcomen Street and Bowling Green Lane, Borough, S.E. Mr. F. DANBY SMITH, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

Strand Building Co. . . . £4,828 0 0

Smith & Sons 4,818 0 0

Hill & Sons 4,798 0 0

Josolyne & Young 4,693 0 0

Parker & Sons 4,595 0 0

Vigor & Co. . . . 4,578 0 0

Appleby & Sons 4,520 0 0

Head & Co. . . . 4,489 0 0

Shillitoe & Co. . . . 4,477 0 0

Green & Sons 4,435 0 0

Barton & Co. . . . 4,343 0 0

Pasterfield & English 4,329 0 0

Hollingsworth 4,263 0 0

Barrett & Power 4,260 0 0

King & Sons 4,173 0 0

Hann & Co. . . . 4,139 0 0

Kent 4,082 0 0

Reason 3,975 0 0

H. J. Williams, Ltd. . . . 3,937 0 0

Castle Bros. . . . 3,700 0 0

For construction of a public underground convenience, for the Hackney Borough Council.

Silk & Son £1,611 10 0

Brund, Pettit & Co. . . . 1,590 0 0

Barrett & Power 1,469 0 0

Whiter & Co. . . . 1,377 0 0

Shurmur & Sons 1,368 0 0

Hann 1,285 0 0

STRAND BUILDING Co., 200 Strand, W.C. (recommended) . . . 1,151 0 0

For the erection of buildings required for an extension of their electricity works at Millfields Road, Clapton, N.E., on the River Lea, for the Hackney Borough Council. Messrs. GORDON & GUNTON, architects, Finsbury House, Blomfield Street, E.C.

A. & S. Wheater £22,833 9 3

Jerram 22,300 0 0

Brightman & Son 21,800 0 0

Sabey & Son 21,450 0 0

Shurmur & Sons 21,360 0 0

Holliday & Greenwood 21,200 0 0

F. & G. Foster 20,645 0 0

Trollope, Sons, and Colls & Sons 20,570 0 0

Markham & Markham 20,500 0 0

John Greenwood, Ltd. . . . 20,183 0 0

Minter 20,125 0 0

Davey & Armitage 19,795 0 0

Lawrence & Sons 19,505 0 0

Mowlem & Co. . . . 19,287 0 0

Patman & Fotheringham 18,951 0 0

Allen & Co. . . . 18,750 0 0

STRAND BUILDING Co., 200 Strand, W.C. (recommended) . . . 18,657 0 0

LUTON.

For the removal of the present buildings on the site of the public baths in Waller Street and the erection thereon of new baths. Mr. J. W. TOMLINSON, A.M.Inst.C.E., borough engineer, Luton.

Sanders & Son £15,523 0 0

Buckingham 15,325 0 0

Dunham 15,284 0 0

Salisbury & Son 15,256 4 1

Hickman & Son 15,096 19 6

Lacey & Son 14,646 17 6

Wood & Son 14,348 17 11

T. & E. Neville 14,135 0 0

T. Higgs, Northampton (accepted) . . . 13,595 11 2

LYME REGIS.

For the erection of eight workmen's dwellings in blocks of four, for the Town Council.

Keitch	£2,053	17	0
Hallett & Collis	1,800	0	0
CADDY & SONS, Lyme Regis (accepted)	1,595	15	0
Bazley	1,570	5	6

SCOTLAND.

For executing the mason, bricklayer, and steel works of extension of fish market along Albert Quay, for the Aberdeen Town Council. Mr. W. DYACK, M.I.C.E., burgh surveyor.

Accepted tenders.

Farquharson & Son, Aberdeen, masons and bricklayers	£2,173	0	0
M'Millan & Co., Glasgow, steelwork	2,137	0	0

For the restoration of St. Magnus Cathedral, for the Thoms Trustees, Kirkwall.

Accepted tenders.

J. Watherston & Sons, Edinburgh, joiner and carpenter	£14,550	0	0
Steel & Wilson, Glasgow, plumber work	1,100	0	0
R. Graham, Edinburgh, slater work	420	9	0

SEAFORTH.

For conversion of private houses into shops at the corners of Hereford Road and Ranson Road and Cambridge Road, for Messrs. Queen & Foster. Mr. J. H. MCGOVERN, architect, Liverpool.

CROMIE (accepted) £450 0 0

SEVEN KINGS.

For erection of the Seven Kings Baptist Church. Messrs. GEO. BAINES & SON, architects, 5 Clement's Inn, Strand, W.C.

	Estimate A.	Estimate B, C, D, F, G, H.
Willmott & Sons	£4,811 0 0	£218 0 0
Hammond	4,773 0 0	271 0 0
Roome & Co.	4,672 0 0	246 0 0
Goddard & Sons	4,523 0 0	121 0 0
Smith & Sons	4,497 0 0	228 0 0
Johnson & Co.	4,482 0 0	216 0 0
Holliday & Greenwood	4,475 0 0	203 10 0
W. E. Blake, Ltd.	4,468 10 0	265 12 0
F. & F. H. Higgs	4,462 0 0	221 0 0
Mattock Bros.	4,444 0 0	199 0 0
Akers & Co.	4,398 0 0	269 0 0
Mattock & Parsons	4,379 0 0	241 0 0
Gladding & Co.	4,370 0 0	240 0 0
Battley, Sons & Holness	4,330 0 0	129 10 0
*Jerram	4,236 0 0	178 15 0
†Appleby & Sons	4,042 0 0	201 0 0

*Accepted with modifications. †Withdrawn.

UPWEY (DORSET).

For erection of pumping station and supply of machinery at Upwey, for the Portland Urban District Council.

Chamberlain	£8,541	12	10
T. Conway, Ltd.	8,419	0	0
JESTY & BAKER, Portland (accepted)	8,163	13	9

WALES.

For alterations and additions to No. 51 Mountstuart Square, Cardiff, for Messrs. Evans & Reid. Messrs. I. JONES & P. THOMAS, architects, 18 St. Mary Street, Cardiff.

Shepton & Sons	£880	0	0
W. H. & P. R. Evans	874	0	0
Knox & Wells	870	0	0
Gough Bros.	870	0	0
G. Griffiths & Son	840	0	0
Blacker Bros.	825	0	0
Morgan	820	0	0
Davies & Son	800	0	0
Symonds & Son	799	0	0
David Davies	798	0	0
Turner & Sons	798	0	0
Gibson	798	0	0
Watkin Williams	790	0	0
Waterman	787	3	9
Stephens	760	0	0
E. R. EVANS & BROS., Cardiff (accepted)	758	13	6

A JOINT deputation of the Fulham, Battersea and Wandsworth Borough Councils will shortly petition the London County Council to substitute a larger bridge for the present Wandsworth Bridge, which is closed to heavy traffic.

UNIVERSITY COLLEGE, DUBLIN.—CHAIR OF ARCHITECTURE.

THE following communication has been issued by the Royal Institute of Architects of Ireland:—

The founding of a Chair of Architecture in the National University, although a matter unlikely to attract much public attention, is a factor in the national life of Ireland which should not be overlooked. For many years several of the British Universities have had their Architectural Schools, but in this country the necessary means for the thorough training of a potential architect have hitherto been lamentably deficient. The educational efforts of the few professional societies, productive, as they have been of late years, of much good, naturally cannot approach in value the systematic instruction obtainable at a properly equipped University. Irish architects have, therefore, laboured under considerable initial difficulties, when compared with their professional brethren elsewhere, and it speaks well for their inherent ability that they have been able to more than hold their own in competition with their more happily circumstanced colleagues.

The new School of Architecture, under the guidance of Professor Scott, should go far to fit the student for his arduous career and for those responsibilities towards the public which are his, in a marked degree, and should materially help to train him in the multitudinous branches of specialised knowledge essential to the equipment of the modern qualified practitioner. One feature of the Irish School is unique in that no student can obtain his architectural degree without having previously served a term in an architect's office, thereby learning how to convert his theoretical acquirements into actual practice. The insertion of this proviso in the University Regulations proves how carefully the subject was considered by the Governing Body.

In order to emphasise the establishment of this School of Architecture, and to mark a departure so intimately connected with the progress of National Art, we are informed that the Royal Institute of the Architects of Ireland are convening a public meeting at 4 o'clock P.M. on Tuesday, October 15, in the Lecture Theatre of the Royal Dublin Society, at which his Excellency the Lord Lieutenant has intimated his intention of being present.

AN EXTENSIVE WATERWORKS FILTRATION SCHEME.

BETWEEN the Wessenden Valley reservoirs of the Huddersfield Corporation and the Woodhead reservoirs of the Manchester Corporation is the watershed of the Ashton, Stalybridge, Mossley and Dukinfield Joint Waterworks Board. In the valleys at Greenfield, Chew and Swineshaw are seven or eight huge reservoirs, which supply water to a population of 140,000 people, distributed over an area of fifty-two square miles. For some years past complaints of lead poisoning were prevalent, and to remedy this the Board undertook a scheme of filtration.

The work has been carried out at a cost of £30,000, and on the 19th inst. filtration stations at Greenfield, Saddleworth and Swineshaw—amongst the largest of their type in the kingdom—were officially opened. The two installations comprise thirty-six pressure filters, designed to purify collectively 5,352,000 gallons of water per day. The filters and the chemical plant have been supplied and erected by Messrs. Mather & Platt, Ltd., of Manchester. Practically the whole of the power in the filter houses is generated by water. The works were designed and supervised by the engineer for the Joint Committee, Mr. Fred J. Dixon, F.G.S., A.M.Inst.C.E. Mr. C. H. George, A.M.Inst.C.E., has acted as assistant-engineer.

ANSWERS TO CORRESPONDENTS.

SPECULATOR.—1. Although you do not state so, it is presumed the mortgage was in favour of the lessor, C., who, according to the arrangement subsequently made, has a right to sue R. for the value of the extra work done on the houses at the latter's request. 2. The mortgagee, C., can recover from the builder, W., in the County Court any exorbitant and unreasonable overcharge paid for the cost of materials. If the defendant goes into the witness box he may be cross-examined as to the two previous blunders he made regarding overtime and materials. It is not wise to take legal proceedings without the aid of a solicitor, who will agree beforehand as to the amount of his costs if asked to.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.**BUCKINGHAMSHIRE.***Buckingham.*—Council cottages.*Terriers.*—Church Hall.*Wycombe.*—Wesleyan Church, Victoria Road: additions.

Factory, West End Road: additions for Messrs. B. Goodearl & Sons.

Chair factory: additions for Mr. E. Gomme.

Chair factory, Abercromby Avenue: additions for Messrs. Joynson, Holland & Co.

Two houses, Desborough Park Road, for Mr. F. Nash.

Two houses, Lucas Road, for Mr. H. T. Dickens.

Laundry, Totteridge Road: additions for the High

Wycombe Steam Laundry Co., Ltd.

Store, Baker Street, for Mr. G. Cooper.

CHESHIRE.*Birkenhead.*—Technical instruction wing to the Lancashire (Navy League) and National Sea Training Home for poor boys, Liscard (£2,500).**CORNWALL.***Burraton and St. Mellions (near).*—Five workmen's cottages. Mr. H. A. Hosking (of Landrake), architect.**CUMBERLAND.***Carlisle.*—Elementary School for 400 places, Newtown (£6,500).*Etterby.*—Sixteen houses, Kingmoor Road. Mr. E. J. Hill (of Carlisle), builder.*Upperby.*—Five cottages for Mr. Briscoe (of Wreay). Mr. E. Musgrave (of Carlisle), builder.**DERBYSHIRE.***Dore and Totley.*—Union Church, Totley Brook Road.**HAMPSHIRE.***Portsmouth.*—The Convent of the Helpers of Holy Souls, Commercial Road, Landport.**HEREFORDSHIRE.***Ledbury.*—Infants' Council School.**ISLE OF WIGHT.***St. Helen's.*—Park House, St. John's Park: additions for Mr. C. Langdon.**KENT.***Dover.*—King's Hall, Queen's Gardens: additions for Mr. A. H. Steele.*Eastry.*—House, Knowlton, for Mr. F. E. Speed. Mr. G. Browning, builder.*Kennington.*—Two houses, Faversham Road, for Mr. W. J. Baker.*Willesborough.*—Three houses, Canterbury Road, for Mr. E. Garnett.

Works extension for Messrs. Earl & Bailey.

Worth.—Bungalow addition for Mrs. Kemp.*Wye.*—Motor garage, Bridge Street, for Mr. C. E. Taylor.**LANCASHIRE.***Heaton Park.*—Old Town Hall: re-erection of façade. City architect.*Liverpool.*—Picture palace, 210 Walton Road, for Mr. E. Roberts.

Picture palace, West Derby Road (near Empire Street), for Mr. J. Ellis.

Picture palace, Warbreck Moor and Barnston Road corner, Aintree, for Mr. T. Spencer.

Picture palace, 21-31 Marsh Street, Kirkdale, for Mr. W. Hutchinson.

Picture palace, West Derby Road and Lisburn Lane, Tue Brook, for Mr. J. Johnston.

MIDDLESEX.*Ealing.*—Wesleyan School chapel, Pitshanger (£1,600).*Hornsey.*—Salvation Army citadel, Tottenham Lane (£2,400).**MONMOUTHSHIRE.***Talywain.*—The "Commercial" Inn: alterations: Mr. T. Roderick (of Aberdare), architect.**NORTHAMPTONSHIRE.***Desborough.*—Church Day schools: improvements (£1,700).*Long Buckby.*—Co-op. Soc. houses, Holyoake Terrace.**NORTHUMBERLAND.***Newcastle-upon-Tyne.*—Mortuary, &c., Old Toll House, Swing Bridge. City surveyor; also

Post-mortem Room, under High Level Bridge.

Picture hall for 1,100 sittings, Chillingham Road and Tosson Terrace. Mr. P. L. Brown, architect.

NOTTINGHAMSHIRE.*Mansfield.*—Twenty-five houses for the Garden City Estate Co.*Nottingham.*—Baptist Church, Mansfield Road: Mechanics' Institute extension.*Retford.*—St. Alban's Church extension. (Accommodation for additional 250 sittings.) £2,000.*Sutton-in-Ashfield.*—Council School for 350 places.**SHROPSHIRE.***Oswestry.*—Workhouse: additional tramp-wards.**SOMERSET.***Taunton.*—Theatre and baths, &c., North Street. (Theatre accommodation for 1,500 sittings.) Messrs. Stone & Lloyd, architects.**SURREY.***Cobham.*—Parish Room.*Croydon.*—St. Stephen's Church.*Guildford.*—Girls' County School.*Leatherhead.*—Infants' school, Gravel Hill: conversion into picture palace.**SUSSEX.***Bexhill.*—Business premises, 57 Devonshire Road: additions. Mr. J. B. Wall, F.R.I.B.A., architect; also

House, Collington Lane.

Bungalow, Dalmeny Rd. Mr. H. Farnfield, architect.

House, Collington Avenue. Mr. B. Stevens, architect; also

Four semi-detached houses, Cranston Avenue.

"Granard," Rotherfield Avenue: additions. Messrs. Hicks & Co., architects.

"Trawalla," Rotherfield Avenue: additions. Messrs. Stevens & Son, architects.

House, Collington Avenue. Mr. P. D. Stonham, architect; also

House, Sutherland Avenue; also

House, Colebrook Road; also

House, Little Common Road; also

House, Warwick Road.

No. 4 St. Stephen's Villas: addition. Mr. J. H. Lye, architect.

Brighton.—Drill Hall and Headquarters, Sussex Place, for the Imperial Service Cadet Corps.

Sanatorium, Hove: additional ward block.

Chichester.—Cottage Homes, Stockbridge, for the City Guardians.*Hayward's Heath.*—Roman Catholic school.*Horsham.*—St. John's School, Springfield Road: additions and alterations.**WORCESTERSHIRE.***Broadway.*—Sixty cottages (£10,000).*Bromsgrove.*—Guardians' buildings for consumptive cases. Mr. A. Vernon Rowe, architect.*Tardebigge.*—Schools: additions for the Earl of Plymouth.**YORKSHIRE.***Cold Coniston.*—Council School alterations. Education architect, County Hall, Wakefield.*Harrogate.*—St. Mary's Church.*Hawes.*—Wesleyan Chapel (£2,000).*Thirsk.*—Workhouse alterations. Mr. J. Cooke (of Harrogate), architect.*Ulleskelf.*—Wesleyan Chapel (£1,500).**WALES.***Corris.*—Public Institute.*Denbigh.*—Bacon factory.

House: alterations for Mr. Dryhurst Roberts.

Llandrindod Wells.—Elementary school and headmaster's residence (£6,000).*Rhyl.*—Drill Hall and Instructor's residence, &c. (£4,000).*Treorchy.*—Four houses and a shop, Park Road, Cwmparc.

Mr. W. D. Morgan (of Pentre), architect.

SCOTLAND.*Beaully.*—Golf Clubhouse.*Dumfries.*—County buildings (£17,000). Mr. J. M. D. Peddie (of Edinburgh), architect.*Dundee.*—Cottage, American Muir Road, for Mr. R. Donn.

Semi-detached cottages, East Haddon Road, for Mr. T. C. Stocks.

Royal Infirmary: Lodge, &c., Barrack Road.

Semi-detached villas, Dalkeith Road, for Messrs. J. Foggie & Son.

Dunfermline.—Carnegie Trust Baths and Gymnasium: extensions.

Opera House: re-construction.

Works, Castleblair: partial rebuilding for Messrs. Inglis & Co.

Workshops, Castleblair Park, for Mr. J. Rintoul.

SCOTLAND—continued.

Glasgow.—Hall, No. 298 New City Road, for Miss E. Taylor (of Possilpark).

No. 44 Washington Street: additions and alterations, for Messrs. W. P. Lowrie & Co., Ltd.

Works, Parkhead. Messrs. W. Beardmore & Co., Ltd. Hospital at Stobhill: additions and alterations to offices, &c.

Fourteen villas, Overtoun Road, Upper Dalmaur. Mr. L. Kirk (of Clydebank), builder.

Lochee.—Wash-houses, Logie Street, for Guild's Trustees.

Paisley.—Works re-building, Seedhill, for Messrs. W. J. & W. Lang.

Portobello.—Town Hall (£7,000).

IRELAND.

Dublin.—Forty-four cottages, Carysfort Road.

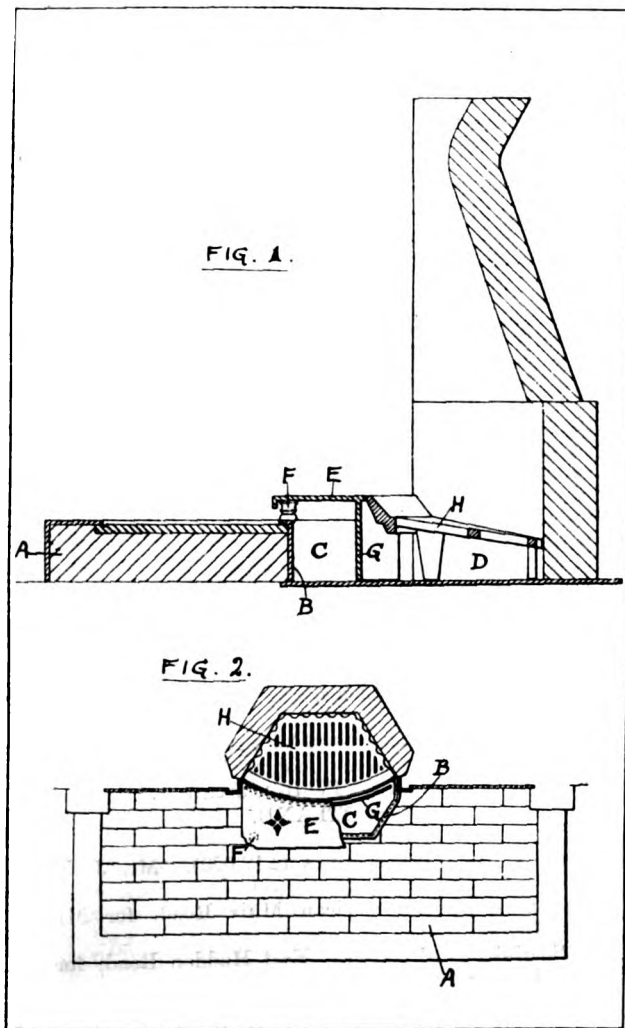
Richmond.—Five cottages for the Asylum Committee.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 26,131. Nov. 22, 1911.—Improvements in or relating to domestic fireplaces. L. H. Teale, 1 Heathfield Terrace, Far Headingley, Leeds. This invention relates to domestic fireplaces of the type in which the ashes are removed and the bottom air supply regulated by way of a pit hollowed out of the rear of the hearth in front of the firegrate, the pit being fitted with a metal front shield or liner and being closed by a plate or lid. Fig. 1 is a sectional side elevation of a raised



hearth fireplace having the improvements applied. Fig. 2 is a plan partly in section and on a smaller scale. The rear of the raised hearth, A, is hollowed out in front of the firegrate to form a space or pit, C, in front of the ash chamber, D, to facilitate raking out the ashes, and is fitted with a corresponding shaped upright metal hearth shield, B, which

has an outer lip to protect the inner edge of the hearth tiling. The cleaning out pit, C, is covered by a loose trivet, E, which is fitted in front (or at front and sides) with small feet, F, resting upon the hearth tiles, the loose trivet, E, having also a curved upright back plate, G, which fits within the cleaning out pit, C, thus forming a further support for the back of the trivet, and at the same time serving as an economiser to restrict the admission of air beneath the fire and ensure slow combustion. The fireplace is fitted with a raised detachable grate, H. August 21, 1912.

PATENT SPECIFICATIONS PUBLISHED
SEPTEMBER 19, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 6,359. March 14, 1912.—Date claimed under International Convention Feb. 1, 1912. Firm C. F. Schroeder, Volmarstein, Westphalia, Germany. Locks.

7,446. March 27, 1912.—Otto Heidrich, Deutsch-Neukirch, Upper Silesia, Germany. Hollow bricks.

8,016. April 3, 1912.—Date claimed under International Convention April 29, 1911. Soc. Anon. des Manufactures des Glaces et Produits Chimiques de Saint-Gobain, Chauny and Cirey, of Ibis Place des Saussaies, Paris. Ornamentation of rolled plate glass.

9,484. April 22, 1912.—Frederic de Mare, 122 Boulevard Leopold II, Brussels. Ozone generating and air filtering fan.

14,740. June 21, 1911.—E. R. Calthrop, Eldon Street House, Eldon Street, London; L. E. Hill, Osborne House, Loughton; and H. W. Child, 112 Durants Road, Ponder's End, Middlesex. Production of sash bars and the like for glazing roofs, windows, and structures in general.

17,215. July 27, 1911.—F. C. York, 27 Waterloo Place, Leamington. Water purification plants.

18,951. Aug. 23, 1911.—A. G. Grice and Geo. Anderson & Co. (1905), Ltd., Carnoustie, Scotland. Apparatus for stone and marble cutting.

19,102. Aug. 25, 1911.—Geo. Chisholm, Providence Works, Fleet Street, Birmingham. Flanged metal pipes particularly applicable for effecting joints with water closet cisterns.

19,792. Sept. 5, 1911.—J. W. Duntley, Harvester Building, Chicago, U.S. Air washing and disinfecting apparatus.

19,916. Sept. 7, 1911.—H. A. Allen, "Ottawa," Setton Road, Northampton Road, Croydon. Stoves and fireplaces.

21,292. Sept. 27, 1911.—F. H. Sharpe, F.C.S., The Ferns, Cressington Park, near Liverpool. Method of and in apparatus for the manufacture of white lead.

22,977. Oct. 18, 1911.—A. J. Bell and P. A. G. Bell, Calder Ironworks, Ravensthorpe, York. Motors for use in adding chemicals to water, sewage, or other liquids for the purpose of purifying or softening same.

23,449. Oct. 24, 1911.—M. T. Medway, 175 Shardeloes Road, Deptford, S.E. Positive safety device or apparatus for lift and hoist openings.

23,917. Oct. 28, 1911.—William Knott, F. C. Giles, and A. Giles, all of 117 Scholefield Street, Birmingham. Casement fastenings.

24,070. Oct. 31, 1911.—Samuel Stott, 7 Dorset Street, Werneth, and J. T. Booth, 45 Gainsborough Avenue, Coppice, Oldham. Planks employed by painters and decorators.

24,831. Nov. 8, 1911.—Thomas Baird, junr., F.R.I.B.A., 134 Bath Street, Glasgow. Construction of floors for buildings.

25,082. Nov. 10, 1911.—F. W. Beard, 32 Winchester Avenue, Brondesbury, N.W. Refrigerating chambers.

25,230. Nov. 13, 1911.—C. J. Ford, 53 Copenhagen Road, Gillingham, Kent. Attachment for paint kettles.

25,251. Nov. 13, 1911.—Enrique Disdier, 95 Muelle, Malaga, Spain. Drying apparatus more particularly intended for the drying of sticky or pitchy substances.

26,403. Oct. 10, 1911.—Date claimed under International Convention Nov. 25, 1910. Dr. August Kahr, Kattowitz, Upper Schleswig, Germany. Machines for manufacturing hollow bricks closed on all sides.

29,166. Dec. 28, 1911.—Alldays & Onions Pneumatic Engineering Co., Ltd., and Oswald Scott, of Great Western Works, Sydenham Road, Birmingham. Radiators for heating buildings and the like.

2,046. Jan. 25, 1912.—Date claimed under International Convention Sept. 2, 1911. Otto Schultz, 70 Kurfürstendamm, Berlin. Construction of gratings, chain work, girders or other load-supporting means formed of metal strip welded together.

545. Jan. 8, 1912.—Harry Evershed, Salford Priors, Warwickshire. Appliances for removing, excavating, or transporting soil, mud, and the like.

7270. March 25, 1912.—Emil Barthelmess, 2 Breitestr., Neuss a/Rhein. Grinding or reducing apparatus.

8,415. April 9, 1912.—Victor Winkler, 133 Boulevard Magenta, Paris. Ruling and drawing devices.

9,757. April 24, 1912.—Johannes Baudenbacher, Sachsische, Privatblaufarbenwerke, Verein Niederpfannestiel, near Aue in Erzgebirge, Germany. Protective plating for safes, strongrooms, &c.

10,009. April 27, 1912.—Veritys, Ltd., King Street, Covent Garden, London, and W. G. Pipkin, 65 Francis Road, Erdington, Warwick. Electrically heated ovens.

12,151. May 22, 1912.—Frederick Hodgson, 24 Queen Victoria Street, E.C. Cabinets for dinner or service lifts.

12,487. May 25, 1912.—E. von Woisky, Basien, near Wormditt, Eastern Prussia. Self-feeding paint brushes.

14,942. June 26, 1912.—Date claimed under International Convention June 26, 1911. H. C. Seipp, Bessemer Building, Pittsburg, U.S. Safety tread.

15,921. July 8, 1912.—Maurice Freud, Alte-Jacobstr. 20, Berlin 68. Mounting or framing for sliding glass doors.

WATER SOFTENING.*

As far back as 1756 the natural zeolites are first described in the "Transactions" of the Academy of Sciences at Stockholm; but it was not until 1850 that Theodor Way, consulting chemist to the Royal Agricultural Society in London, established the fact that the zeolites placed in contact with salt solutions were capable of absorbing the bases contained in the dissolved salts, at the same time yielding up into solution the bases which they themselves contained.

Let me here repeat one of Way's experiments.

In this small glass filter you see a layer of natural zeolites; for convenience I took fuller's earth. I will pass through it a water of 10° hardness, and as you will see from the test I now make the hardness of the filtered water has been reduced.

The following reaction took place:—The bases contained in the hard water, calcium and magnesium, have been absorbed by the zeolites, and the latter have given up their own bases (sodium) to the water.

This experiment explains to a certain degree why a soft water of perhaps 7° is very often found at a depth of, say, 500 feet, while at a depth of 100 feet the hardness of the water out of the same borehole is 50°.

The explanation is that rain water passing through a strata of limestone, and thus becoming hard, afterwards passes through a layer of these natural zeolites, whose softening action you saw just now.

Dr. Gans, Professor at the Mining Academy of Berlin, and President of the Laboratory of Geonomy at the Berlin University, made a thoroughly scientific research of the natural zeolites, classified them, and published the constitution formulæ. I shall not bother you here with all the chemical formulæ; but anybody who cares to have them, I refer to the March number of the "Journal" of the Society of Dyers and Colourists.

Ultimately Professor Gans succeeded in producing zeolites artificially, and took out a patent to manufacture artificial zeolites on a commercial scale in the year 1906.

He named his artificial zeolites "Permutit" from the Latin "permutare," to exchange.

The great outstanding property of permutit, against the natural zeolites, is its greater power of exchanging its own base against other bases. This process of exchange follows closely the stoichiometric law of chemistry, and you can readily convert sodium-permutit into calcium-permutit, magnesium-permutit, ammonium-permutit, potassium-permutit, &c., by passing through it solutions of calcium, magnesium, ammonia, potassium.

The proof that only an exchange of bases takes place is shown by the fact that if you pass through a layer of calcium-permutit, magnesium-permutit, &c., a salt solution which contains the base sodium, you convert the calcium and magnesium-permutit back into sodium-permutit.

The following experiments will illustrate my previous remarks:—

I have here in this glass tube a layer of sodium-permutit,

which, as you see, is a grey, porous silicate, and will pass a hard water of 20° through the permutit. (The hardness consists of 10° bicarbonate of calcium and 10° sulphate of calcium.) You see the exchange takes place. The sodium-permutit has absorbed the calcium from the hard water and yielded its own sodium basis to the water. The filtered water is 0°.

To illustrate this further, I will pass a water of 20° through the same filter; the hardness in this case is due to magnesium sulphate.

You see, again, the filtered water is 0°, showing that the exchange of the base magnesium took place as readily as when calcium was removed.

The next filter contains a layer of calcium-permutit. Now, if I pass a solution of common salt (the basis of which is sodium) through the filter, the base calcium from the calcium-permutit enters the common salt solution and the sodium enters the permutit. As you will see, the solution leaving the filter contains the calcium which has been turned out of the permutit, as I will show you by adding ammonium-oxalate, which, in the presence of calcium, will form a white precipitate.

Gentlemen, these experiments disclose the whole Permutit process for water softening down to 0°, and the procedure of regeneration.

Let me repeat in words what we saw, and so describe this new process.

If a water of a given hardness is passed through a bed of sodium-permutit, the sodium in the permutit is replaced by the calcium and magnesium taken from the water giving a calcium-magnesium-permutit, while the acid radicles formerly united to the calcium and magnesium in the water unite with the sodium which is turned out of the permutit. There will obviously come a time when all the sodium in the sodium-permutit has been replaced by calcium and magnesium from the treated water. When this period is reached it is not necessary to renew the permutit which has become exhausted, but to regenerate or revivify it. This is done by the action of a solution of common salt on the exhausted permutit. The laws of chemical exchange again come into play, the interchange being in this case in the opposite direction, sodium from salt driving out the calcium and magnesium from the exhausted permutit and converting it back to sodium-permutit.

It is obvious that all the manufacturer of sodium-permutit plants has to do is to calculate how much sodium-permutit is necessary to take out the hardness of the water per hour and per day, and then to place the permutit into a cylinder.

Many methods have been, and still are, employed to soften a water—one precipitates the lime and the magnesia in the water by addition of lime and soda, the other by addition of lime and baryta, the third by addition of caustic soda.

But all these processes suffer from the disadvantage that in the softening of cold water the precipitation of the lime and magnesia does not take place instantaneously, but only after a comparatively long time. It is also impossible to obtain a complete softening down to zero degrees by any one of the said processes.

Gentlemen, if you take into account the fact that most of the water supplies in England are of a variable nature, the constituents changing daily, in some cases hourly, then you will agree with me that by the aid of a fully trained water chemist only is it possible to use any of the above-mentioned processes for softening water down to 4° without making it more injurious than the crude water, on the one hand, through an excess of the reagents used, and, on the other hand, by an insufficient quantity of chemicals, resulting in a partially treated and invariably turbid and cloudy water.

I have nothing to say against the above-mentioned three processes when they are worked by a trained water chemist, who makes the analysis of the water every hour and adjusts the amount of reagents according to his analysis, testing at the same time the composition of his reagents and controlling the softened water. If this trained water chemist is to succeed in softening the water down to 4-5°, and keep its alkalinity down, then his time is fully occupied the whole day long.

What I absolutely deny is the possibility of an automatically working lime and soda water-softening plant. This plant is built of invariably stock sizes for all waters, irrespective of their composition, although an analysis is generally made in the laboratory of the seller of the plants. The manufacturer is told to add so much lime and so much soda to the water, the settling time being generally calculated as sufficient with one hour, which is totally inadequate.

* A Paper entitled "Notes on Water Softening," by Dr. John F. Meyer, read at a South-Eastern District Meeting of the Institution of Municipal Engineers.

The manufacturer is very often left alone with it, and finds perhaps after six months that the scale in his boilers is not quite as thick as before, but hard like enamel. The economisers are choked up with a very fine powder; in the washing machines he finds a layer of a fine powder, the pipes are filled with this fine powder, the dyed goods are inferior to when using hard water, the wool washed with the softened water has become harsh, &c.

The manufacturer requires these defects to be put right, and, owing to this being impossible, comes to the conclusion that water softening is a thing not sufficiently advanced to be of any value. The manufacturer finds this automatically working apparatus cannot produce automatically a soft water, because the crude water changes every day, making it necessary to add different quantities of reagents, because the reagents have changed their composition, all of which he learns by experience; in the meantime, he has bought new machinery to put the first plant right, in order to do the impossible.

This goes on as long as the patience of the manufacturer lasts. In many cases the automatically worked water-softening plant ends in the works as a storage tank.

Gentlemen, every chemist can tell you that the composition of the permutitised water is such that these dangerous troubles which I have mentioned just now cannot possibly occur. It is chemically impossible, because there is no lime and magnesia left in the permutitised water, and this is the reason why the Permutit process for water softening claims superiority.

Please understand, however much the water may vary in hardness, it is always reduced to 0°, and, therefore, no incrustation can take place in economiser tubes or boilers, as always occurs in waters partly softened by other processes.

The permutitised water effects the largest possible saving in those industries or places where soap is used, and it is, along with distilled water, the only water which prevents the formation of sticky, insoluble lime, and magnesia soaps and the objectionable lime lakes in dyeing and finishing.

Permutitised water is, further, an excellent water for drinking purposes, confirmed by the most eminent medical doctors of to-day. Let me please explain why I say that a water-softening plant of the lime and soda system should not be installed without giving the buyer the chemical explanation why his plant cannot fulfil the claims made for it except under certain conditions, and why it happens that sometimes it cannot fulfil them at all.

There is no other country in Europe with such an enormous and flourishing industry as England. The consequence of which is that the available water becomes worse and worse, compelling the manufacturer to treat it artificially to make it suitable for his purposes. He knows full well that the question of water is a most serious one, upon which his entire business depends, and should be made aware of the whole of the difficulties and troubles liable to arise with any system of softening under all conditions and at all times.

If some of you had been with me during the last nine months through factories and mills in this country, you would have received ample proof of my statement that I did not in one single case come across a lime-soda plant automatically worked which was working satisfactorily, or giving for the manufacturer constant results. It is not always the fault of the seller of lime-soda plants, but he should acquaint the purchaser what to expect. He is not the only sufferer. Water softening gets an undeserved bad name, and I am sure there would not be half the failures there are with lime-soda plants were all points laid clear from the beginning as to what the actual, not theoretical, results would be.

A further phase of the Permutit process is the manganese-permutit, manufactured by precipitating heptoxide of manganese on a permutit by permanganate of potassium.

If I pass a water which contains iron or manganese through this filter all the iron and manganese salts will be oxidised and kept back in the permutit. The regeneration of the filter takes place by using a solution of permanganate of potassium. These manganese-permutit filters work excellently in those cases where every trace of iron and manganese has to be taken out of the water, and further to eliminate organic matter.

Another application of the manganese-permutit filters is to sterilise waters which contain harmful germs.

Since these plants can be worked at a high rate of filtration, the initial and working costs are very small, the working costs being about $\frac{1}{2}$ d. per 1,000 gallons of water treated.

It would be beyond the scope of this paper to deal with all the uses that permutit can be put to. Among many uses are:—

Manufacturing of salts of a certain base by double exchange.

The eliminating of dangerous alkaline salts from the diffusion juice in the sugar industry.

The obtaining of gold from very dilute solutions; and in different combinations permutit practically possesses an unlimited field.

VARIETIES.

THE will of Mr. Benjamin Morton, aged seventy-three, of Bakewell, Derbyshire, and of Manchester, builder and contractor, has been proved at £78,180 gross.

THE Pembroke (Co. Dublin) Urban District Council on Monday approved a scheme for providing 295 houses in the Delta district of Ringsend at a cost of £60,000.

THE Bristol Board of Guardians have approved the execution of works in connection with the substitution of electric lighting for gas lighting at the Stapleton Workhouse, at a cost not exceeding £1,016.

MESSRS. S. PEARSON & SONS, LTD., have received the first contract in the great scheme of dock extension and improvements projected by the Port of London Authority. The work to be proceeded with will cost about £2,350,000.

THE contract for the erection of a post office at Wick, N.B., has been obtained by Mr. A. Hall, Mile End Joinery Works, Aberdeen. The contract price is about £7,000. The buildings are to be ready within about a year. The new office is to be in Market Place.

THE Southampton Education Committee are about to apply for a loan of £18,400, being the estimated cost of a school accommodating 1,260 scholars in King Edward Avenue. The plans have been prepared by Mr. J. A. Crowther, the borough engineer.

A LOCAL Government Board inquiry was held last week at Stafford into an application for their approval of the appropriation by the Town Council of land in Backwalls South as a site for twenty working-class houses, and for sanction to borrow £3,200 for the erection of the dwellings.

THE Selby Urban District Council, meeting in committee on Monday, decided to offer to purchase land in Armoury Lane for the building of about 50 artisans' houses. The purchase of another plot in the Flaxley Road district for 57 dwellings, at a cost of £500, is under consideration.

THE Croydon Town Council on Monday agreed to apply to the Local Government Board for sanction to a loan of about £20,000, being Croydon's contribution to a proposed new road $3\frac{1}{2}$ miles long from Thornton Heath to Purley, which will relieve the congested main road. The total estimated cost is £55,000, and of this amount £30,000 will be given by the Road Board.

THE Council of the Historic Society of Lancashire and Cheshire have passed a resolution that, while supporting the erection of a memorial to his late Majesty King Edward VII. on a suitable site, they strongly protested against any scheme which involved the alteration of the southern base of St. George's Hall.

MESSRS. BALDWIN, LTD., iron, steel, and tinplate manufacturers, are projecting a scheme for their steelworks at Port Talbot. They propose to spend £300,000 on extensions, which will take the form of three new modern smelting furnaces of the Siemens pattern, another new plate mill and a section mill will also be constructed, and these, when completed, will provide additional employment for 200 or 300 men.

THE usual lectures on the history and architecture of St. Bartholomew the Great, West Smithfield, E.C., will be given on Saturdays, October 12 and 19, at 2.30 P.M. The stone coffin and the worked stones recently found on the site of the chapter-house will be on view in the cloister. No fees are charged, but a collection will be made for the Restoration Fund of the church, now greatly in need of support.

AT the present time the Berkefeld Filter Co., whose offices and showrooms are at 121 Oxford Street, London, W., are executing an order for the Egyptian State Railways for 750 "Berkefeld" germproof filters and spare cylinders. We have from time to time made reference in these columns to the value of the Berkefeld filter. In this country, fortunately, our water supplies are, generally speaking, fairly pure, and, in consequence, it requires an outbreak of typhoid or diphtheria before we consider the question of taking the precaution of ensuring that the water we drink is of absolute purity. This is not as it should be; "cure" is an excellent word, but "prevention" is a better one. The Berkefeld filter is so easily fitted, so reasonable, and so simple to keep clean that no house should be without one.

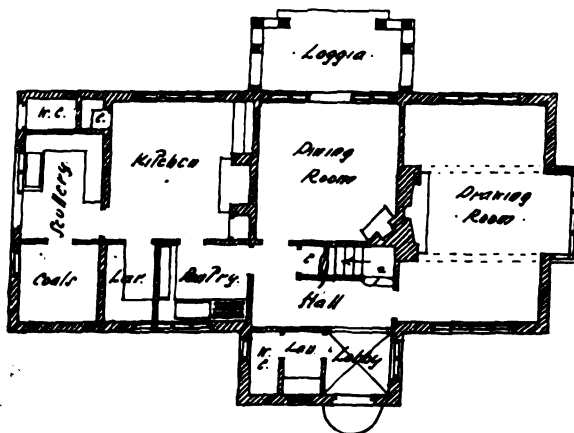
WEEK-END COTTAGES, BUNGALOWS, AND OTHER SMALL HOUSES.

We again have the pleasure of presenting a number of designs of varied character, both as regards treatment and cost, by different architects, whom the Editor will be pleased to introduce to anyone who would wish to build a house according to the sketches or a modification of them.

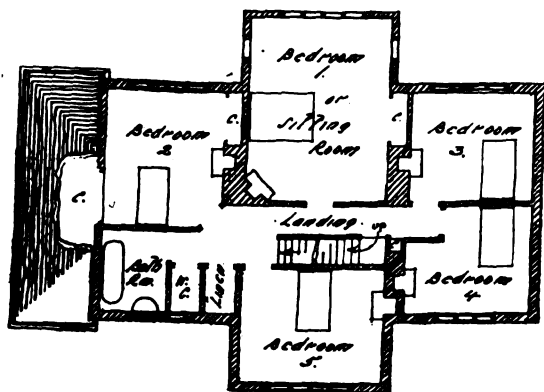
DESIGN NO. 55.



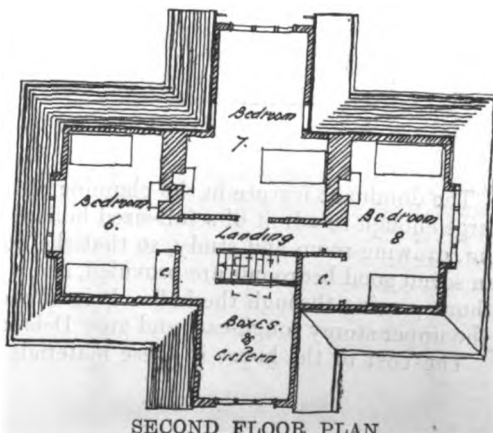
GARDEN FRONT.



GROUND FLOOR PLAN.



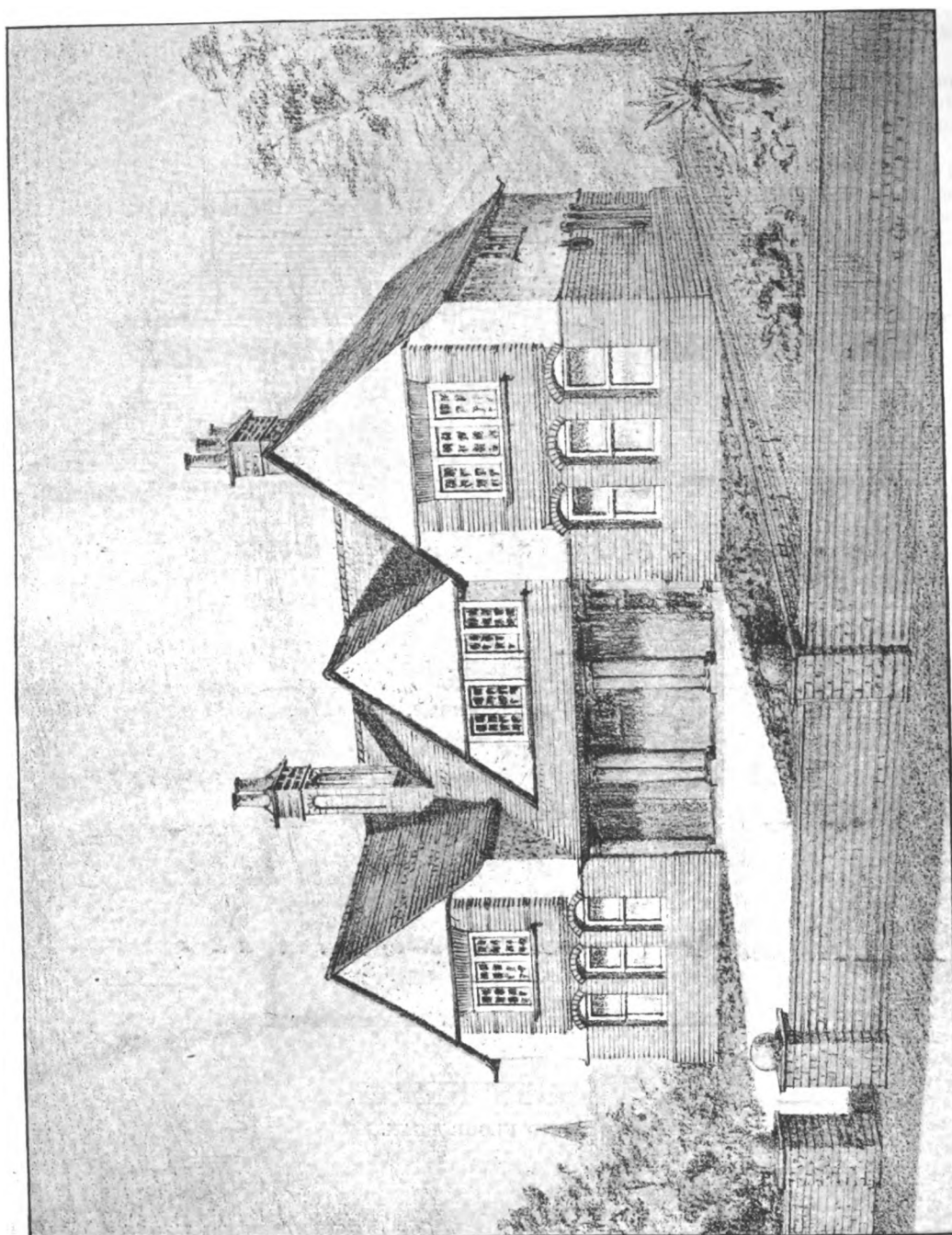
FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

This house has an exceedingly compact and simple plan and contains two sitting-rooms and eight bedrooms, or three sitting-rooms and seven bedrooms, with excellent and well arranged kitchen and offices. Plenty of cupboards are provided and a pleasant loggia on the garden front, as shown in the view. Brick faced walls on the ground storey with hung tiling and half-timber work above are intended, with tile covered roofs. The cost of this house would be about £1,100.

DESIGN NO. 56.

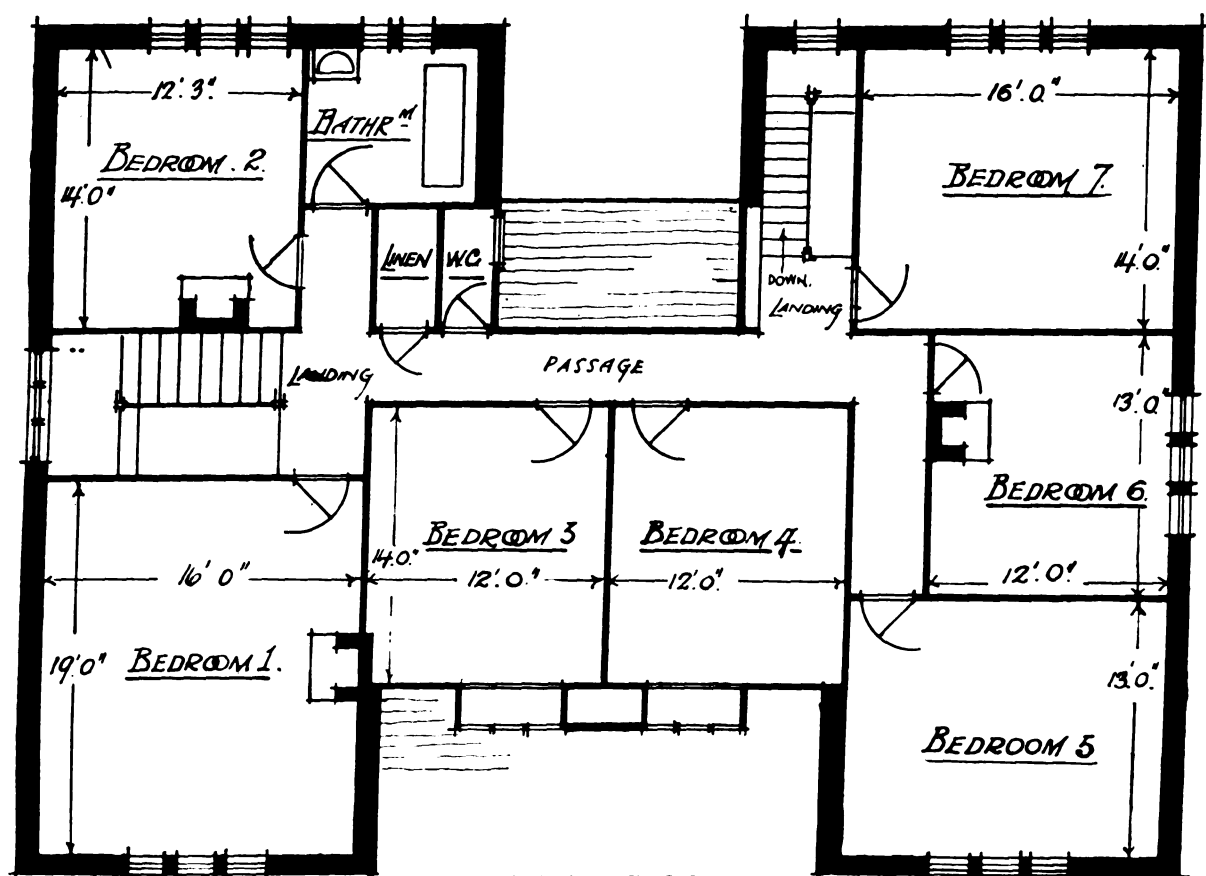


ENTRANCE FRONT.

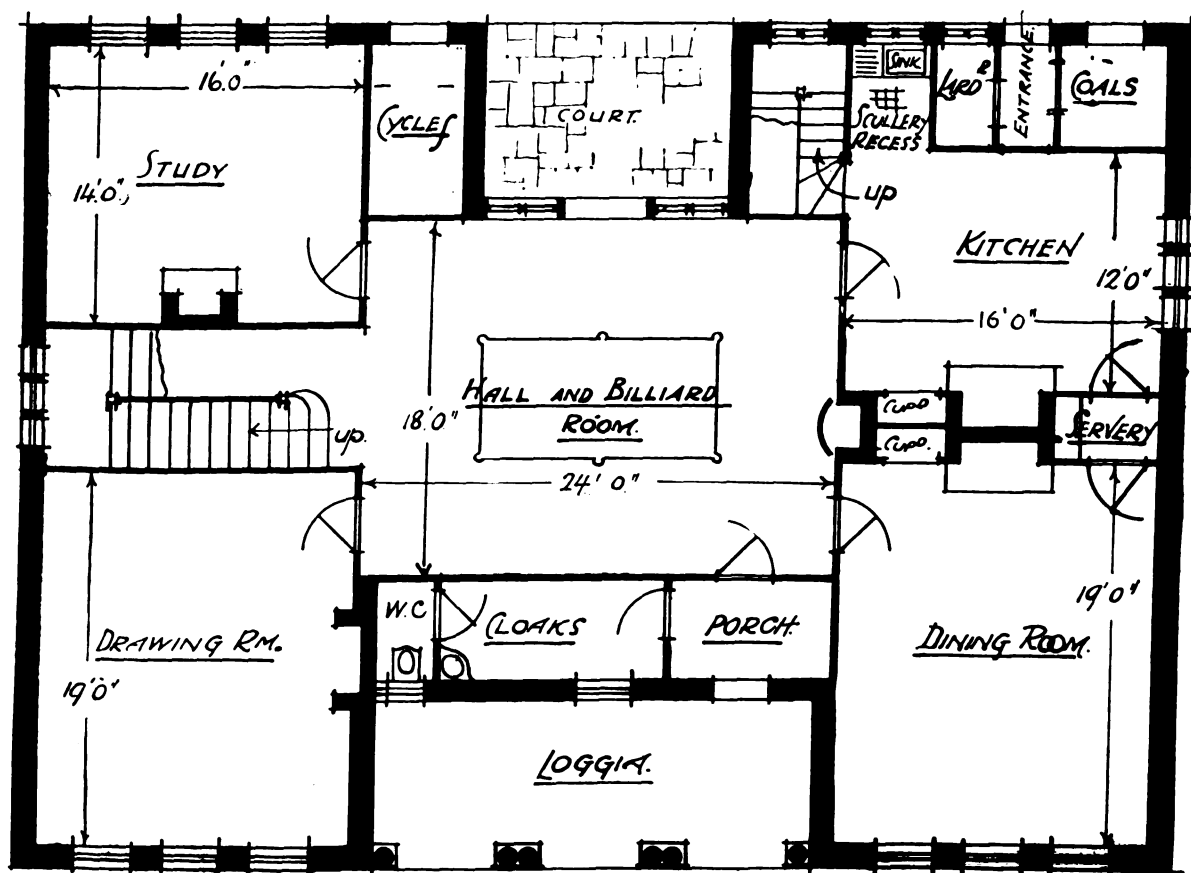
The dominant feature in the planning of this house is the provision of a hall twenty-four feet by eighteen feet, which is large enough to admit of a full-sized billiard table being used with comfort. Besides this hall there are a large dining-room, drawing-room and study, so that the house possesses four excellent reception rooms. As shown on the first-floor plan seven good bedrooms are provided, and a back staircase allows servants to reach the bedroom floor from the kitchen without passing through the hall. It is intended that this house should be built with red and purple bricks, with part of the upper storey rough-cast and grey Delabole slate for the roofs.

The cost of the house in these materials would be about £1,700.

DESIGN NO. 56—continued.



FIRST FLOOR PLAN.



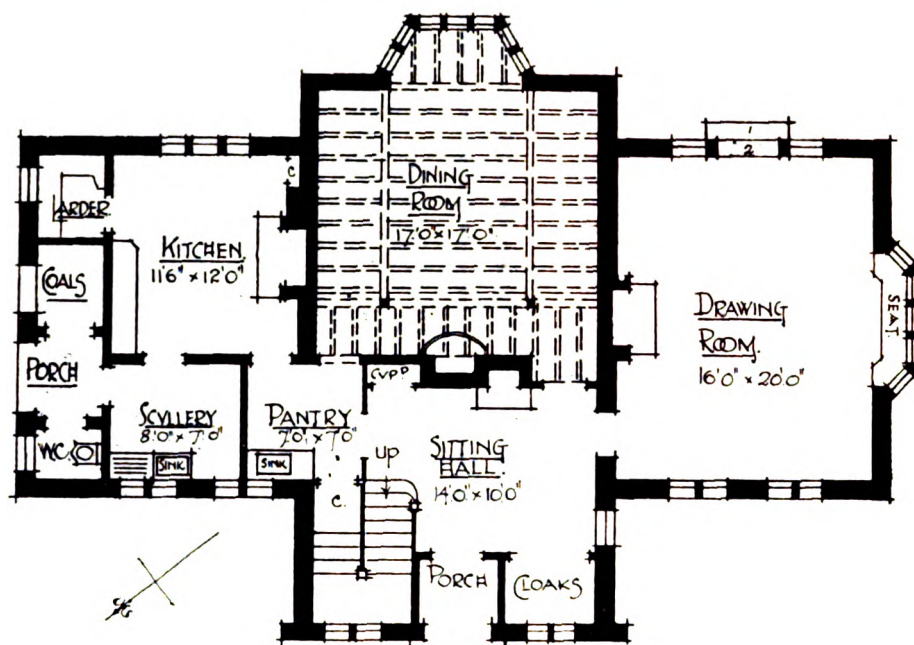
GROUND FLOOR PLAN.

DESIGN NO. 57.

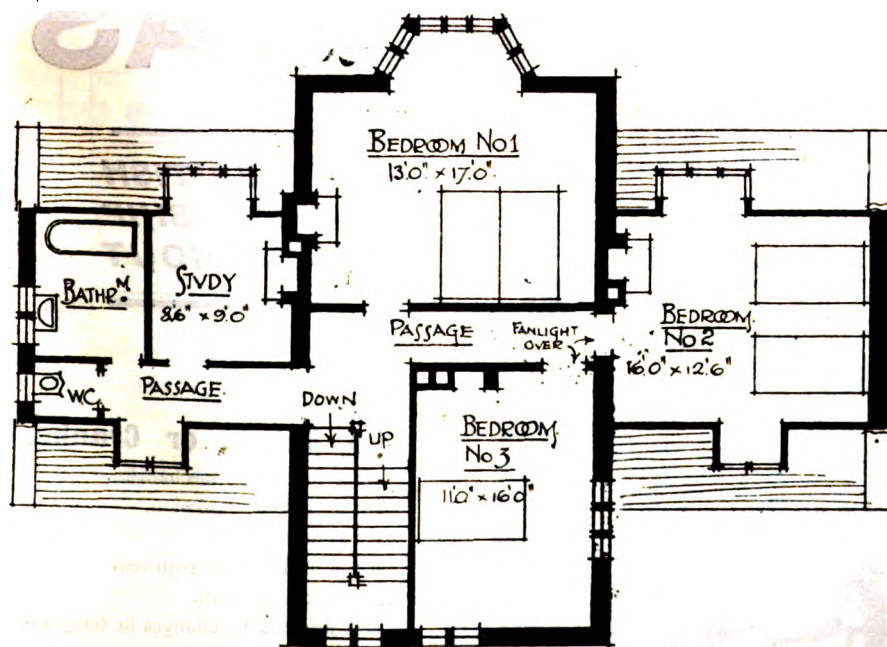


This house is intended for a suburban or country residence for a family of about six people, and comprises drawing-room, dining-room, and sitting-hall on the ground floor with the usual offices, whilst five bedrooms are provided on two upper floors, together with small room intended for a study. The walls would be built in narrow red bricks, with stone dressings to openings and angles, and the windows would be glazed with leaded glass in metal casements. The roof would be covered with green rustic slates. It is estimated that the cost would work out at about £1,200.

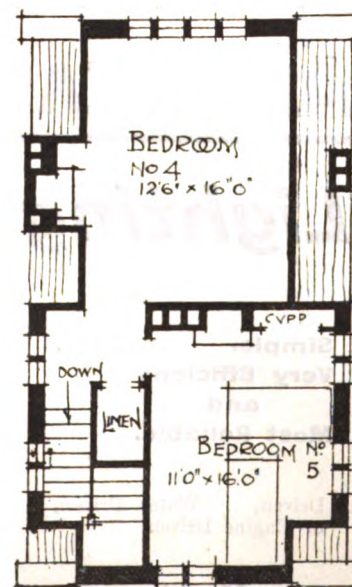
DESIGN NO. 57—continued.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

FERRANTI LTDELECTRICAL ENGINEERS,
HOLLINWOOD, Lancs., and 78 King Street, MANCHESTER.

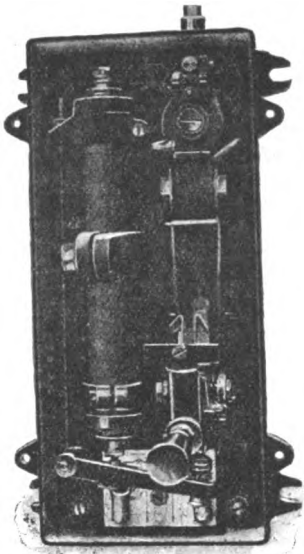
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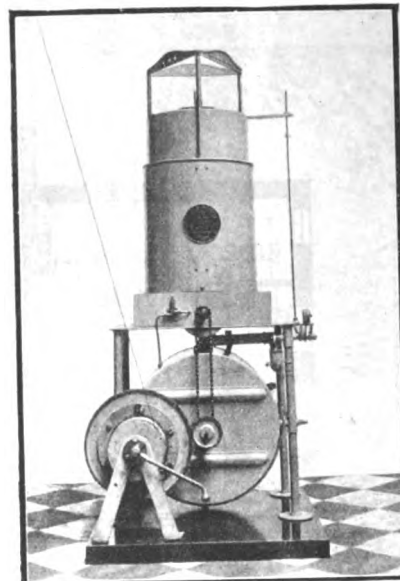
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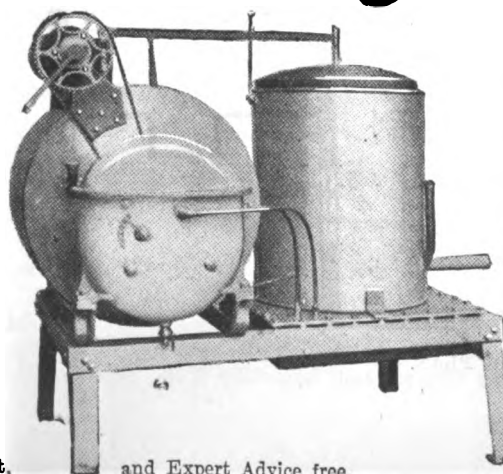
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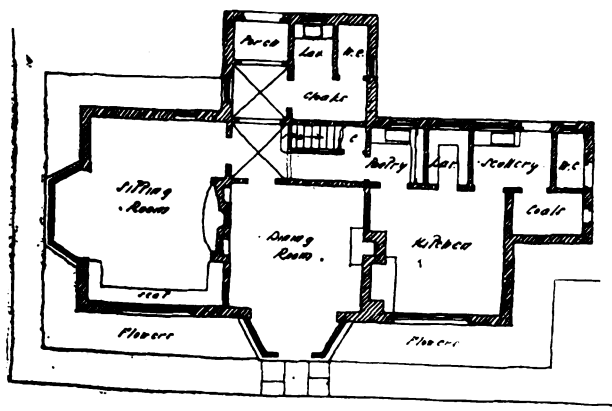
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Telephone: 2215 Victoria.

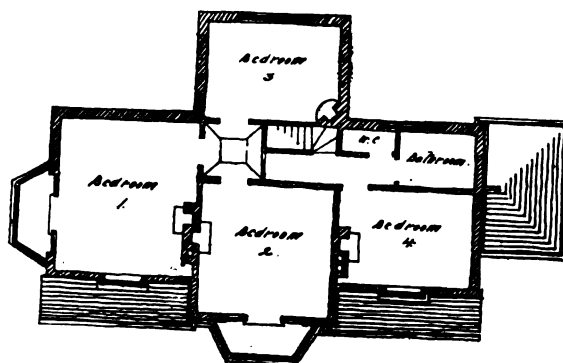
DESIGN NO. 58.



GARDEN FRONT.



GROUND PLAN.



FIRST FLOOR PLAN.

This week-end or country cottage is a modified bungalow with the roof coming down to the ground storey, but with square rooms on the first floor. Brick faced walls below and tile above for vertical surfaces and roof make a picturesque but economical building, and the cottage could be built for about £600.

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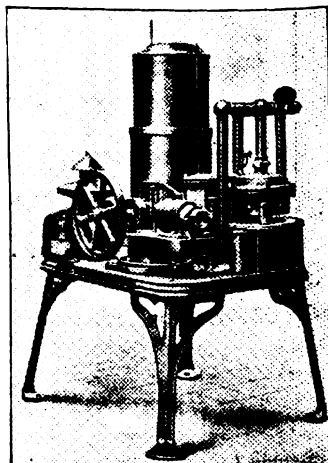
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THE Architect and Contract Reporter.

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Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

• As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

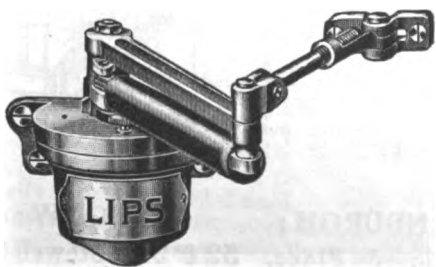
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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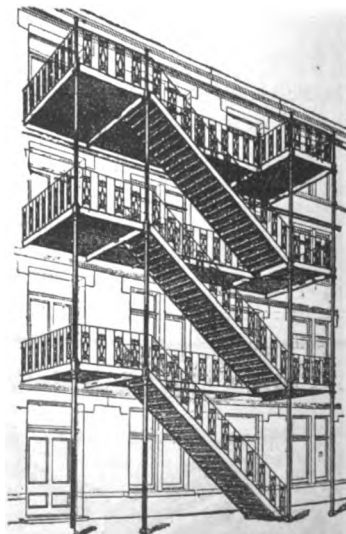
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GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

LONDON.—Oct. 14.—The Wandsworth Borough Council invite competitive designs for a public swimming bath at Balham. A copy of the conditions of competition, schedule of accommodation to be provided, and plan of the site may on payment of £1 1s. deposit be obtained from Mr. P. Dodd, M.I.C.E., borough engineer, 215 Balham High Road, S.W.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ALNE.—Oct. 11.—For the erection of a schoolroom, vestry, and Wesleyan church, Alne, Yorks. Mr. J. F. Todd, architect and surveyor, Easingwold.

ASHTON-UNDER-LYNE.—Oct. 17.—For the erection of an elementary school to accommodate 400 children at Waterloo. Deposit £2. Mr. Henry Littler, county architect, 16 Ribblesdale Place, Preston.

BIRMINGHAM.—Oct. 10.—For erection of boundary walls on the site of the proposed Birmingham telegraph factory, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Tosh, H.M. Office of Works, Pinfold Street, Birmingham, and H.M. Office of Works, &c., Storey's Gate, S.W.

BISHOP AUCKLAND.—Oct. 5.—The Auckland, Shildon, and Willington Joint Hospital Board invite sole tenders for erection of additional blocks at their No. 1 and No. 2 hospitals, situate respectively at Tindale Crescent and Helmington Row; and also a separate sole tender for erection of a caretaker's house at the No. 1 hospital. Send applications and £1 1s. deposit by Oct. 5. Mr. R. B. Thompson, architect, Bishop Auckland.

BLACKBURN.—Oct. 14.—For new tower and completion of St. Silas Church. Messrs. Austin & Paley, architects, Lancaster.

BOWDERDALE.—Oct. 10.—For alterations to the farmhouse, Bowderdale, Wasdale, Cumberland. Deposit £2 2s. Mr. J. H. Rea, Gatehouse, Eskdale, Cumberland.

BRISTOL.—Oct. 16.—For the formation of muniment rooms under the rates office at the Council House. Mr. P. Addie, city valuer, The Exchange, Bristol.

BURRATON AND ST. MELLION.—Oct. 9.—For the erection of five workmen's cottages near Burraton and St. Mellion, Cornwall (two separate tenders), for the St. Germans Rural District Council. Deposit £2 2s. Mr. H. A. Hosking, architect, Landrake.

CHELMSFORD.—Oct. 16.—For the pulling down and removal of part of the "Old White Hart" premises, at the corner of Moulsham Street and Baddow Road, the materials to be the property of the contractor. The Borough Engineer, Municipal Offices, 16 London Road, Chelmsford.

CHELTENHAM.—Oct. 10.—For repairs and renovations to Marlborough House, Winchcombe Street, for the Education Committee. Messrs. Chatters & Smithson, architects, 17 Regent Street, Cheltenham.

CHORLEY.—Oct. 14.—For renovating the Independent Methodist Church. Mr. A. Bennett, secretary, 99 Eaves Lane, Chorley.

GOLCAR.—Oct. 7.—For the various trades required in erection of one dwelling-house in East Street. Mr. A. Shaw, architect, Golcar.

HALIFAX.—For erection of extension to Kingston Toffee Mills, for Messrs. Riley Bros. Messrs. Glendinning & Hanson, architects, 15 Commercial Street, Halifax.

HARROW.—Oct. 12.—For the construction of two public conveniences, for the Urban District Council. The Surveyor to the Council, Council Offices, Harrow.

HENDON.—Oct. 21.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3s. Mr. G. Hornblower, F.R.I.B.A., 2 Devonshire Terrace, Portland Place, London, W.

HENDON.—Oct. 21.—For erection of central fire station at The Burroughs, for the Hendon Urban District Council. Deposit £3 3s. Mr. H. A. Welch, 20 Golder's Green Parade, Golder's Green, Hendon.

HEPTONSTALL.—Oct. 18.—The West Riding Education Committee invite whole tenders for the following work at Heptonstall Council School—viz.: Playground. The Education Architect, County Hall, Wakefield.

HERNE BAY.—Oct. 16.—For erection of a pavilion and concert hall on the East Cliff, for the Urban District Council. The Surveyor, Town Hall, Herne Bay.

HUDDERSFIELD.—Oct. 10.—For the trades required in erection of a receiving home for children at the back of 32 Ramsden Street, and fronting Back Ramsden Street, for the Guardians. Messrs. Kirk & Sons, architects, Market Place, Huddersfield.

HUDDERSFIELD.—Oct. 21.—For the masons', joiners', plumbers', slaters', plasterers', painters', concretors', electricians', heating engineers', and iron and steel founders' works required in erection of two-storey warehouse and offices, St. Andrew's Road. Messrs. Abbey & Hanson, 11 Cloth Hall Street, Huddersfield.

IRELAND.—Oct. 9.—For the erection of the following cottages, for the Rathdown Rural District Council: (1) Two double cottages at Lower Rathdown; (2) two double cottages at Stilebawn; (3) one single cottage at Stilebawn; (4) one single cottage at Monastery. Mr. Patrick Cuniam, clerk, Loughlinstown.

IRELAND.—Oct. 10.—For erection and furnishing of National school buildings at Drumclugh, Bantry, co. Cork. Bantry Royal Irish Constabulary Barrack.

IRELAND.—Oct. 14.—For erection of an electric and general millwright shop at Dundalk, for the Great Northern Railway Co. (Ireland). Deposit £1 1s. The Engineer's Offices at Dublin and Belfast, and Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

IRELAND.—Oct. 14.—For erection of five houses adjacent to Tate's Avenue, Belfast, for the Great Northern Railway Co. (Ireland). Deposit £2 2s. The Engineer's offices at Dublin and Belfast. Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

IRELAND.—Oct. 14.—For erection of stables, cart sheds, and dwelling-houses, Beechfield Street, Belfast, for Messrs. Ferris & Co., cartage contractors. Mr. C. MacAlister, architect, Whitehall Buildings, Belfast.

IRELAND.—Oct. 15.—For erection of the following dwellings: (1) Forty-four three-room houses, in three blocks; (2) twenty two-room houses, in two blocks; (3) one four-room house, together with construction of roads, paths, water mains, sewers, &c., at Bray. (Mr. P. H. McCarthy, B.E., architect, 39 Westmorland Street, Dublin.) Send £2 2s. deposit to Mr. P. MacDonnell, clerk, Town Hall, Bray.

KEIGHLEY.—Oct. 10.—For the various works (except joiners' and painters' work) required in erection of bakery in Greengate Road. Messrs. J. Haggas & Sons, architects, &c., North Street, Keighley.

LEICESTER.—Oct. 14.—For alterations and additions to the Leicester Inland Revenue Offices, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Collector of Customs and Excise, Newark Street, Leicester, and H.M. Office of Works, &c., Storey's Gate, S.W.

LITTLE LANGDALE.—Oct. 19.—For the necessary work of erecting a stone arch bridge and making approaches at Fitz Ford, for the South Westmorland and Ulverston Rural District Councils. Mr. J. W. Nelson, surveyor, 5 Lowther Street, Kendal, and Mr. W. F. Y. Molyneux, surveyor, Town Hall, Ulverston.

LONDON.—Oct. 11.—For the builders' work necessary in erection of a new plumber's shop, alteration to stores, &c., at the waterworks yards, for the Croydon Town Council. The Borough Engineer, Town Hall, Croydon.

LONDON.—Oct. 15.—For the extension of Battersea district post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W.

LONDON.—Oct. 16.—For repairing, maintaining, and decorating police stations, police courts, houses, buildings, &c., situated within four miles of Charing Cross, for three years from Jan. 1, 1913, for the Receiver for the Metropolitan Police District. Deposit £1 1s. The Police Surveyor, New Scotland Yard, S.W.

MACHEN.—Oct. 21.—For erection of about thirty semi-detached dwelling-houses near the Council schools at Machen, Mon., for the Machen No. 1 Building Club. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

NUNEATON.—Oct. 22.—For alterations to the master's house, for the Guardians. Send in names and £1 1s. deposit by October 9 to Mr. H. Quick, architect, Market Place, Nuneaton.

ORLESTON.—Oct. 7.—For execution of new tie rods, fuel shed, &c., at the Orleston Council school, for the Kent Education Committee. Mr. W. J. Spicer, correspondent, 19 Bank Street, Ashford, Kent.

PAUL.—Oct. 12.—For proposed alterations and improvements to the Paul Council school, Cornwall. Mr. Sampson Hill, architect to the County Education Committee, Green Lane, Redruth.

PONJERAVAH.—Oct. 12.—For proposed alterations and improvements to the Ponjeravah Council School, for the Cornwall Education Committee. Mr. S. Hill, architect to the committee, Green Lane, Redruth.

PORTLAND.—Oct. 18.—For erection of an elementary school at Portland, for the Education Committee. The County Offices, Dorchester, at the offices of Messrs. Fletcher & Brett, Wimborne, and at the Police Station, Portland.

PORTSMOUTH.—Oct. 21.—For erection of a public elementary school at North End, for the Education Committee. Deposit £3 3s. Mr. J. W. Walmisley, F.R.I.B.A., architect, 7 King's Terrace, Southsea.

PURLEY.—Oct. 10.—For erection of Purley new telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Croydon General Post Office and H.M. Office of Works, &c., Storey's Gate, S.W.

ROTHERHAM.—Oct. 9.—For the erection of a mines rescue and aid station costing about £4,000. Send applications by Oct. 9 to Mr. A. Blenkinsop, Dalton Main Collieries, Rotherham.

RUTHIN.—Oct. 12.—For the erection of four workmen's dwellings on the south side of Mwrog Street. Mr. J. Rice Jones, borough surveyor, Town Hall, Ruthin.

SEDFIELD.—Oct. 7.—For the erection of a general bath-house for male patients at the Durham County Asylum. Mr. W. Crozier, A.M.I.C.E., county surveyor and architect, Shire Hall, Durham.

SIDDAL.—Oct. 7.—For the whole or separate trades in connection with erection of the easterly half of the St. Mark's Church, Siddal, Halifax. Send names by Oct. 7 to Messrs. J. Walsh, F.S.I., & G. Nicholas, F.R.I.B.A., architects, 10 Harrison Road, Halifax.

SPALDING.—Oct. 15.—For erection of thirty-six cottages adjoining the Holbeach Road, for the Urban District Council. Deposit £1 1s. Mr. J. B. Corby, F.S.I., architect and surveyor, Stamford and Spalding.

STANLEY.—Oct. 15.—For the remodelling and erection of new infants' school (for about 200 scholars) at Stanley, near Crook. Sole tenders. Mr. W. Rushworth, Shire Hall, Durham.

SNYDALE.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with alterations to Featherstone, Snaydale, Council School—viz.: Builder, joiner, plumber. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

TADWORTH.—Oct. 8.—For erection in reinforced concrete of depot buildings and tank with a capacity of 60,000 gallons

at the Council's dépôt, near the South-Eastern Railway Co.'s station, Tadworth, Surrey, for the Epsom Rural District Council. Mr. T. E. Ware, surveyor to the Council, Waterloo Road, Epsom.

TREDEGAR.—Oct. 14.—For additions to the drill hall at Tredegar, for the Monmouthshire Territorial Force Association. Deposit £1 1s. Messrs. Habershon, Fawcner & Co., F.R.I.B.A., architects, 41 High Street, Newport.

ULVERSTON.—Oct. 10.—For additions to the High Carley sanatorium, for the Ulverston Joint Hospital Board. Messrs. Settle & Brundrit, architects, County Square, Ulverston.

WALES.—Oct. 7.—For erection of branch institute at Blaenrhondda for the Fernhill and Blaenrhondda workmen. Send names on or before October 7, with a deposit of £2 2s., to Mr. W. D. Morgan, M.S.A., architect, 194 Ystrad Road, Pentre, Rhondda.

WALES.—Oct. 8.—For the following works, for the Great Western Railway Co.: (1) Erection of stores and offices at Neath; (2) erection of stores and messrooms at King's Dock, Swansea; (3) provision of lavatory accommodation in the goods offices at Swansea. The Engineer at Neath Station.

WALES.—Oct. 10.—For erection of a gauger's cottage and stores at Dolgarrog, Carnarvon, for the Conway and Colwyn Bay Joint Water Supply Board. Mr. T. B. Farrington, engineer, Trinity Square, Llandudno.

WALES.—Oct. 10.—For erection of a house and stable in Portland Road, Aberystwyth. Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

WALES.—Oct. 10.—For erection of fifteen pairs of semi-detached villas, together with the construction of roads, sewers, &c., on Gwaelodygarth Field, Meyrick Estate, Merthyr Tydfil, for the Meyrick Building Club. Mr. T. E. Rees, Bank Chambers, Merthyr Tydfil.

WALES.—Oct. 11.—For certain alterations and additions to the training school at Aberdare, for the Guardians of Merthyr Tydfil Union. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WALES.—Oct. 12.—For renovations to the De Winton Hotel, Llanbradach, for Messrs. D. Williams & Co., Taff Vale Brewery, Merthyr. Mr. C. M. Davies, M.S.A., High Street, Merthyr.

WALES.—Oct. 21.—For erection of eighty-six cottages at Pontycymmer, near Bridgend. Tenders may be submitted for the whole, or, alternatively, for forty-nine cottages and thirty-seven cottages. Deposit £2 2s. Ffaldau Collieries Co.'s Offices, Pontycymmer.

WATFORD.—Oct. 15.—For new public convenience in Casiobury Park, for the Urban District Council. Deposit £2. Mr. D. Waterhouse, engineer and surveyor to the Council, Watford.

WEDNESBURY.—Oct. 14.—For erection of a building and shed in connection with the isolation hospital in Dangerfield Lane. Mr. E. Martin Scott, borough surveyor, Town Hall, Wednesbury.

WHEATLEY.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works at the Wheatley Beckett Road Council School—viz.: Heating engineer and builder. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

WINWICK.—Oct. 10.—For the erection and extension of the nurses' home (east wing), for the Committee of Visitors of the Lancashire County Asylum. Deposit 10s. 6d. Mr. H. Ellis, clerk and steward, Winwick Asylum, Warrington.

TENDERS.

BOSTON.

For alterations and additions to White Hart annex, for Mr. C. J. Mather. Mr. FREDERICK PARKER, F.S.A., architect, Boston.

Lucas & Sons	£528	0	0
Sherwin & Son	480	0	0
PINDER & SON, Boston (accepted)	453	0	0

For alterations and additions to premises, New Street, for Messrs. J. & J. Beulah, merchants, Boston. Mr. FREDERICK PARKER, F.S.A., architect, Boston.

Greenfield	£330	0	0
Sherwin & Son	287	0	0
Pinder & Son	228	0	0
LUCAS & SONS, Boston (accepted)	227	15	0

BROADSTAIRS.

For erection of a water-softening house and construction of a ferro-concrete tank, for the Urban District Council.	
Yorkshire Contracting Co.	£1,197 18 0
Martin	1,025 0 0
May	1,019 0 0
ELLIOTT & Co., Margate (accepted)	944 0 0
Surveyor's estimate	949 0 0

CHEADLE.

For the erection of a school, for the Staffordshire County Council.	
W. ALCOCK, Cheadle (accepted)	£3,922 0 0

DOVER.

For erection of a riding school with orderly rooms, stores, armouries, caretaker's quarters, and sundry alterations to existing drill hall, Liverpool Street. Mr. F. G. HAYWARD, F.S.I., architect, Dover.	
Bromley	£6,990 0 0
Wise	6,700 0 0
Austen & Lewis	6,650 0 0
Beaufoy	6,650 0 0
Wallis & Sons	6,464 0 0
Skinner	6,459 0 0
Epps	6,298 0 0
Browning	6,285 0 0
Lewis & Sons	6,260 0 0
Parsons	6,200 0 0
Paramor	6,198 0 0
Denne & Son	6,144 0 0
T. T. Denne	5,989 0 0
W. H. GRIGG, Dover (accepted)	5,767 0 0

GOSFORTH.

For taking down existing boundary walls and gateways on the south side of Elmfield Road and forming the added width of roadway, for the Gosforth Urban District Council. Mr. G. NELSON, A.M.I.C.E., engineer and surveyor, Gosforth.	
Jackson & Sons	£568 0 0
Simpson	559 12 3
Fleek	463 7 3
Robson	429 19 0
Tulip	428 11 10
J. W. HENDERSON, Gosforth (accepted)	417 19 1

HOLLINGBOURNE.

For the provision of a new boiler at the workhouse.	
Weeks & Son	£370 5 0
Thompson	340 0 0
Walter	338 10 0
BARDEN & HEAD (accepted)	324 0 0

HULL.

For erection of a fisherman's school in the Boulevard, for the Education Committee. Mr. J. H. HIRST, city architect, Hull.	
PANTON & SONS, LTD. (accepted)	£5,246 0 0

IRELAND.

For sewerage works at Greenisland, for the Larne Rural District Council.	
Hirst & Son	£4,473 17 6
Fleming Bros.	3,946 16 8
Grainger Bros.	3,944 2 5
Campbell & Son	3,790 0 0
J. & L. Thomson	3,759 19 8
Pollock	3,625 0 0
Heggarty & Gault	3,347 0 2
J. Ross & Son, Belfast (accepted)	3,312 1 8

LAMBOURN.

For erection of workmen's dwellings, for the Hungerford Rural District Council. Mr. W. S. RAINE, A.M.I.C.E., surveyor, Hungerford.	
Hoskings Bros.	£1,366 0 0
Edwards & Son	1,071 10 0
Adams	995 0 0
G. ELMS, Newbury (accepted)	880 0 0

LEEK.

For erection of a public convenience at the corner of West and Mill Streets. Mr. W. E. BEACHAM, C.E., surveyor, Leek. Quantities by the Surveyor.	
Grace	£370 0 0
Salt	322 19 0

LONDON.

For erection of a residence for the medical superintendent and four workmen's cottages on the grounds adjoining their isolation hospital, World's End, Winchmore Hill, N., for the Enfield and Edmonton Joint Hospital Board.	
Howard & Co.	£3,572 0 0
Newby Bros.	2,650 0 0
Fairhead & Sons	2,623 0 0
Monk	2,400 0 0
Faulkes	2,300 0 0
JENNINGS & GRENFELL, Waltham Cross (accepted)	2,115 0 0

PORTSMOUTH.

For rebuilding offices, &c., at Fratton Street Council school, for the Education Committee. Mr. A. H. BONE, surveyor, Portsmouth.	
Till	£2,092 0 0
Woods	1,990 0 0
Tanner	1,936 0 0
Jeram	1,930 0 0
Evans	1,925 0 0
Privett	1,869 0 0
S. SALTER, Southsea (accepted)	1,848 0 0

ROTHERHAM.

For the instalment of an additional unit at the destructor works.	
HEENAN & FROUDE (accepted)	£5,375 0 0

SCOTLAND.

For various works in connection with the erection of municipal offices, for the Town Council. Messrs. CULLEN, LOCHHEAD & BROWN, architects, Hamilton.	
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Accepted tenders.

T. Anderson & Son, masons	£6,782 0 0
J. Dalziel & Son, joiners	2,448 0 0
W. Bannatyne, plasterer and slaterer	815 0 0
J. W. Torrance, electric lighting	615 0 0
Lachlan Taylor, plumber	566 0 0
R. Brown & Son, Ferguslie Works, Paisley, tilers	320 0 0
J. Combe & Son, Glasgow, heating	319 0 0
J. M'Laren, glazier	149 0 0

*Rest of Hamilton.***STOCKSFIELD.**

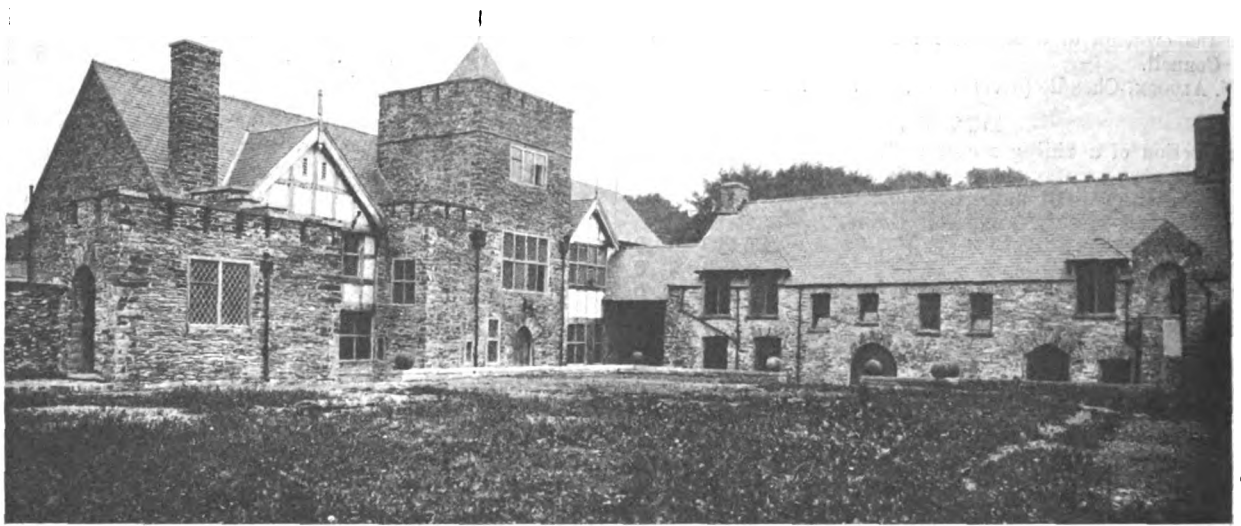
For providing and laying complete about 3½ miles of earthenware pipe sewers near Stocksfield, with manholes, flushers, stream crossings, &c., for the Hexham Rural District Council. Mr. J. E. PARKER, A.M.I.C.E., engineer, Newcastle.	
Usher & Co.	£4,394 1 0
Davidson & Miller	3,950 0 0
Simpson	3,932 16 10
Kennedy	3,123 0 0
Friend & Co.	3,012 12 9
Davison	2,809 5 0
Skinner	2,795 0 0
Armstrong	2,686 8 0
J. W. HENDERSON, Newcastle-on-Tyne (accepted)	2,674 4 0

TOWCESTER.

For the erection of seventeen working-class houses, for the Rural District Council. Messrs. JACKSON, STOPS & Co., architects, Towcester.	
MARRIOT, Rushden (accepted)	£2,710 0 0

WEYMOUTH.

For the completion of the nave and west end of St. Paul's Church, Westham, Weymouth. Mr. GEO. H. FELLOWES PRYNNE, F.R.I.B.A., architect, 6 Queen Anne's Gate, Westminster. Quantities by Mr. R. HENRY HALE, F.S.I., 6 Queen Anne's Gate, S.W.	
Longley & Sons	£3,849 0 0
Jesty & Baker	3,399 19 11
W. E. Blake, Ltd.	3,320 0 0
Honour & Sons	3,260 0 0
Goddard & Sons	3,200 0 0
Webster & Cannon	3,170 0 0
Wilkins & Sons	3,144 0 0
W. L. Franklin, Ltd.	3,050 0 0
A. White Bowman	2,789 0 0
Theo Conway, Ltd.	2,770 0 0



OWAIN GLYNDWR'S PARLIAMENT HOUSE.—VIEW FROM BOWLING-GREEN, SHOWING NEW BUILDING ON LEFT AND OLD PARLIAMENT HOUSE ON RIGHT. (See page 196.)

DEVELOPMENT OF ROME.

THE British Consul for Rome, Mr. C. C. Morgan, in his annual report, says:—The fiftieth anniversary of the proclamation of the unity of Italy encouraged the Government and municipal authorities to organise during 1911 an International Exhibition of Fine Arts, to which were added archaeological, historical, and other sections. It was hoped that, quite independently of the patriotic aspect of the exhibition, the trade of Rome would have benefited by the influx of a large number of visitors. Unfortunately, an exaggerated scare as to the sanitary conditions of the country and other minor causes kept the long-expected visitors away from Rome. Few works of art, consequently, found a purchaser, and although accounts have not yet been published it is held that from a financial point of view the exhibition was not a success, despite the most praiseworthy activity displayed by the city authorities. By general consensus the British section was held to furnish the best examples of contemporary art among the numerous sections which constituted the exhibition.

Elsewhere in his report Mr. Morgan says:—One of the causes which in the past retarded the industrial development of Rome has been the want of fuel, which had to be imported from a distance, and its price consequently hampered would-be manufacturers. Of late years, however, the water resources of the district have been largely utilised. It is calculated that about 65,000 electric horse-power are at present available for private consumption. The aggregate quantity is 85,000 horse-power, of which 70,000 horse-power are hydro-electric and the rest obtained by steam. The tram company absorbs 6,000 horse-power, private consumption 14,000 horse-power, thus leaving over 60,000 horse-power available for general industrial purposes. The advocates of the progress of the Italian capital expect that as soon as the conditions will permit it, the Act granting certain fiscal exemptions to new industrial concerns in the Neapolitan districts will be extended to Rome. Such a course would undoubtedly give a powerful stimulus to local economy.

There is no indication, Mr. Morgan continues, of any abatement in the demand for apartments, and house rents continue to rule very high. The cost of commodities has risen with the rates of wages, for which the labouring classes have agitated for so long without their taking into proper account the inevitable sequel which has made their bread, their meat, and all the other necessities dearer to almost a prohibitive degree. The gradual increase of population has also contributed to raise the price of commodities, as has also the large number of well-to-do visitors who are not so fastidious in their expenditure, especially when they come here for a short stay. There is also the adverse factor that the bulk of supplies has to be imported from outlying dis-

tricts, local production in connection with edibles being quite inadequate. It is calculated that the cost of living has trebled in Rome during recent years.

The sanitary progress of the district is very markedly borne out by the following returns of deaths, giving comparative figures at certain dates:—Rate of mortality per 1,000 inhabitants: Rome, annual rate in the years 1871-75, 33.7, annual rate in the years 1906-10, 18.9; Perugia, 27 and 19.3; Macerata, 27 and 19.9; Ascoli, 27.2 and 19.7. There are very few large Continental cities that seem to be able to vie with the Italian capital in point of health, and great credit is due to the local authorities for their successful efforts in reducing the old high rate of mortality to the present figure.

TRADE NOTES.

LAKE HOUSE, Salisbury, which was recently destroyed by fire, is now being restored. Messrs. Cubitt & Co. are the builders. Chilmark stone is being used, and this is all being worked at the quarries by Messrs. T. T. Gething & Co., Ltd.

A USEFUL little booklet is being issued by the British Thomson-Houston Co., the proprietors of the Mazda lamp. The cost is clearly given on the cover as priceless. A postcard will purchase a copy. Ask for "The Lighting News"; contains electric light terms, how to read your electric light meter, and a light in the coal-cellar, &c.

MESSRS. WM. RIDER & SONS, LTD., the publishers of our contemporary *The Timber Trades Journal*, inform us that they are removing their London offices to Cathedral House, 8 to 11 Paternoster Row, E.C. Their telephone number is 647 Holborn, and their telegraphic address will, of course, remain as "Riderwood, London."

MESSRS. BENHAM & SONS, LTD., 66 Wigmore Street, London, W., are at present installing the "Perfect" system of hot-water heating at the following:—Hydro Hotel, Eastbourne (Mr. J. W. Woolnough, architect); offices, 31 and 33 Lime Street, Holborn, E.C. (Messrs. Fair & Myer, architects); Messrs. Jurgens' premises, Snow Hill, E.C. (Mr. Herbert Knight, architect); Avington Park, Alresford (Messrs. Millar & Cox, architects); The Gate of St. John, Ryde (Messrs. Albury, Rising & Morgan, architects); additional premises, Brooke Street, Holborn, W.C. (for the Prudential Assurance Co.); Flesk, Burnham, Somerset (for Mrs. Coxon); factory premises, Great Eastern Street, E.C. (for Mr. Charles Alstrom); All Saints Church, Goodmayes (Mr. P. K. Allen, architect); and Minerva Buildings, Tottenham Court Road (Mr. George Vernon, architect).

DOVER Harbour Board intend to spend £200,000 on increased dock accommodation, principally to deal with the coal export traffic.



OWAIN GLYNDWR'S PARLIAMENT HOUSE.—BACK VIEW BEFORE RESTORATION; (See page 196.)

A COMPREHENSIVE SUBWAY SYSTEM IN CHICAGO.

IN accordance with instructions from the City Council, the Harbour and Subway Commission of Chicago, in conjunction with a sub-committee of the committee on local transportation of the Chicago City Council, presented a joint report to the whole committee on September 10. In this report, says the *Engineering Record*, was outlined a proposed comprehensive system of passenger subways for the city of Chicago.

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A single universal 5-cent fare is proposed.

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A high level subway is proposed. There are to be no grade crossings, one subway dipping under another at street intersections.

The movements of the trains, supplemented by the action of centrifugal fans, is relied upon for ventilation.

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The total cost of the subways proposed in the joint report is \$96,257,000. In addition to this the estimated cost of equipment is \$34,844,000. The equipment will be furnished by the operating company.

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OWAIN GLYNDWR'S PARLIAMENT HOUSE.—VIEW FROM BOWLING-GREEN, SHOWING NEW BUILDING ON LEFT AND OLD PARLIAMENT HOUSE ON RIGHT. (See page 196.)

DEVELOPMENT OF ROME.

THE British Consul for Rome, Mr. C. C. Morgan, in his annual report, says:—The fiftieth anniversary of the proclamation of the unity of Italy encouraged the Government and municipal authorities to organise during 1911 an International Exhibition of Fine Arts, to which were added archaeological, historical, and other sections. It was hoped that, quite independently of the patriotic aspect of the exhibition, the trade of Rome would have benefited by the influx of a large number of visitors. Unfortunately, an exaggerated scare as to the sanitary conditions of the country and other minor causes kept the long-expected visitors away from Rome. Few works of art, consequently, found a purchaser, and although accounts have not yet been published it is held that from a financial point of view the exhibition was not a success, despite the most praiseworthy activity displayed by the city authorities. By general consensus the British section was held to furnish the best examples of contemporary art among the numerous sections which constituted the exhibition.

Elsewhere in his report Mr. Morgan says:—One of the causes which in the past retarded the industrial development of Rome has been the want of fuel, which had to be imported from a distance, and its price consequently hampered would-be manufacturers. Of late years, however, the water resources of the district have been largely utilised. It is calculated that about 65,000 electric horse-power are at present available for private consumption. The aggregate quantity is 85,000 horse-power, of which 70,000 horse-power are hydro-electric and the rest obtained by steam. The tram company absorbs 6,000 horse-power, private consumption 14,000 horse-power, thus leaving over 60,000 horse-power available for general industrial purposes. The advocates of the progress of the Italian capital expect that as soon as the conditions will permit it, the Act granting certain fiscal exemptions to new industrial concerns in the Neapolitan districts will be extended to Rome. Such a course would undoubtedly give a powerful stimulus to local economy.

There is no indication, Mr. Morgan continues, of any abatement in the demand for apartments, and house rents continue to rule very high. The cost of commodities has risen with the rates of wages, for which the labouring classes have agitated for so long without their taking into proper account the inevitable sequel which has made their bread, their meat, and all the other necessities dearer to almost a prohibitive degree. The gradual increase of population has also contributed to raise the price of commodities, as has also the large number of well-to-do visitors who are not so fastidious in their expenditure, especially when they come here for a short stay. There is also the adverse factor that the bulk of supplies has to be imported from outlying dis-

tricts, local production in connection with edibles being quite inadequate. It is calculated that the cost of living has trebled in Rome during recent years.

The sanitary progress of the district is very markedly borne out by the following returns of deaths, giving comparative figures at certain dates:—Rate of mortality per 1,000 inhabitants: Rome, annual rate in the years 1871-75, 33.7, annual rate in the years 1906-10, 18.9; Perugia, 27 and 19.3; Macerata, 27 and 19.9; Ascoli, 27.2 and 19.7. There are very few large Continental cities that seem to be able to vie with the Italian capital in point of health, and great credit is due to the local authorities for their successful efforts in reducing the old high rate of mortality to the present figure.

TRADE NOTES.

LAKE HOUSE, Salisbury, which was recently destroyed by fire, is now being restored. Messrs. Cubitt & Co. are the builders. Chilmark stone is being used, and this is all being worked at the quarries by Messrs. T. T. Gething & Co., Ltd.

A USEFUL little booklet is being issued by the British Thomson-Houston Co., the proprietors of the Mazda lamp. The cost is clearly given on the cover as priceless. A post-card will purchase a copy. Ask for "The Lighting News"; contains electric light terms, how to read your electric light meter, and a light in the coal-cellar, &c.

MESSRS. WM. RIDER & SONS, LTD., the publishers of our contemporary *The Timber Trades Journal*, inform us that they are removing their London offices to Cathedral House, 8 to 11 Paternoster Row, E.C. Their telephone number is 647 Holborn, and their telegraphic address will, of course, remain as "Riderwood, London."

MESSRS. BENHAM & SONS, LTD., 66 Wigmore Street, London, W., are at present installing the "Perfect" system of hot-water heating at the following:—Hydro Hotel, Eastbourne (Mr. J. W. Woolnough, architect); offices, 31 and 33 Lime Street, Holborn, E.C. (Messrs. Fair & Myer, architects); Messrs. Jurgens' premises, Snow Hill, E.C. (Mr. Herbert Knight, architect); Avington Park, Alresford (Messrs. Millar & Cox, architects); The Gate of St. John, Ryde (Messrs. Albury, Rising & Morgan, architects); additional premises, Brooke Street, Holborn, W.C. (for the Prudential Assurance Co.); Flesk, Burnham, Somerset (for Mrs. Coxon); factory premises, Great Eastern Street, E.C. (for Mr. Charles Alstrom); All Saints Church, Goodmayes (Mr. P. K. Allen, architect); and Minerva Buildings, Tottenham Court Road (Mr. George Vernon, architect).

DOVER Harbour Board intend to spend £200,000 on increased dock accommodation, principally to deal with the coal export traffic.



OWAIN GLYNDWR'S PARLIAMENT HOUSE.—BACK VIEW BEFORE RESTORATION; (See page 196.)

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BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BERKSHIRE.

Reading.—Kendrick Boys' and Girls' Schools, Sidmouth Street and London Road.

BUCKINGHAMSHIRE.

Boveney.—House for Mrs. Tough.

Cippenham.—Two cottages, Cippenham Lane, for Mr. S. Westron.

Denham.—House for Mr. F. Burness.

Iver Heath.—Additions to "Dell Cottage" for Mr. T. Mosley, C.B.

Langley.—Two pairs of houses, Elmhurst Road, for Mr. W. J. McCormack.

Alterations to "Love Hill House," for Mr. J. Wardrop.

Wymcombe.—Two houses and workshop, Desborough Road and Richardson Street, for Mr. A. W. Nash.

House and additions to works, London Road, for Mr. Bateman.

CORNWALL.

Truro.—Diocesan Training College: Chapel (£1,200).

Vernan.—St. Symphorian Church restoration (£1,300).

CUMBERLAND.

Maryport.—National Schools: alterations and improvements.

DERBYSHIRE.

Belper.—Mission Church, Cow Hill (£1,300). Messrs. Hunter & Woodhouse, architects.

DEVON.

Barnstaple.—Four houses, Yeo Vale Road. Messrs. Oliver & Son, architects; also

Alteration to house, Orchard Terrace.

Parish Room, St. Mary's Churchyard.

Exeter.—Devon Bacon Factory.

"Falmouth Inn," Cowick Street: re-building. Mr. C. Cole, architect.

DORSET.

Bridport.—Eleven working-men's model cottages (£2,100).

DURHAM.

Gateshead.—Workhouse Laundry: alterations. Messrs. Newcombe (F.) & Newcombe (A.R.I.B.A.), of Newcastle-upon-Tyne, architects.

Ushaw Moor.—St. Luke's Church. Mr. W. H. Wood, F.R.I.B.A., superintending architect (£2,000). Messrs. Rutter & Sons (of Esh), contractors.

ESSEX.

Barnston.—Church of England schools: improvements.

Brentwood.—Girls' Secondary school.

Chadwell St. Mary.—Council school for 250 places.

Harwich.—Elementary Council school for 500 boys and girls.

Ilford.—Dust destructor, Seven Kings.

Leyton.—Mission Hall, Bloxhall Road, for All Saints' and Emmanuel Church (£1,700).

South Benfleet.—Council school enlargement (£1,850). Mr. L. Weasey, architect.

Southend-on-Sea.—County High school for 300 girls (£18,700).

West Thurrock.—Infants' Council school for 200 places.

GLOUCESTERSHIRE.

Oldland.—Parish Club and Hall (£1,600).

Thornbury.—Workhouse Infirmary extension (£950).

KENT.

Erith.—House, Lesney Park Road, for Mr. A. Downton. Alterations to Offices, Manor Road, for the British Fibro-Cement Syndicate. Messrs. G. H. Gunning & Sons, architects.

Gravesend.—Six houses, Cross Lane, for Mr. W. R. Barton.

Sevenoaks.—Houses, Bradbourne Road, for Mr. G. E. Presland.

House, Vine Avenue, for Mr. F. Brooker.

LANCASHIRE.

Manchester.—His Majesty's Theatre, Deansgate.

Turton.—Cotton weaving shed for the Turton and Edgworth Mill Building Co.

Wigan.—Sanatorium.

Council school, Beech Hill. Messrs. J. B. & W.

Thornley, architects.

Girls' High school.

Winwick.—Asylum: Nurses' Home extension (£2,200).

LEICESTERSHIRE.

Hinckley.—Ten working-class houses. Council surveyor.

MIDDLESEX.

Harefield.—"The Swan" P.H.: rebuilding, for Messrs. T. Wethered & Sons.

MONMOUTHSHIRE.

Talywain.—The "Commercial Inn": alterations. Mr. T. Roderick (of Aberdare), architect.

NORTHAMPTONSHIRE.

Raunds.—Public Elementary school. Messrs. Blackwell & Riddey (of Kettering), architects.

NORTHUMBERLAND.

Willington Quay.—St. Aidan's R.C. Church: infants' school (£1,400).

NOTTINGHAMSHIRE.

Nottingham.—Mansfield Road Baptist church and schools, Gregory Boulevard and Sherwood Rise. Messrs. Sutton (F.R.I.B.A.) & Gregory, architects. Mr. J. Wright, contractor (£8,000).

Booth Memorial Hall.

Y.M.C.A. Building.

Walsingham.—Infectious diseases hospital.

SOMERSET.

Taunton.—Cinematograph Theatre, Swimming and Turkish Baths, North Street (£10,000).

SURREY.

Camberley.—Wesleyan Church (£2,500).

Croydon.—St. Stephen's Church, Norbury: completion (£3,700). Mr. W. S. Weatherley, F.R.I.B.A. (of London), architect. Mr. E. J. Saunders, contractor.

Guildford.—House, Ennismore Avenue, for Messrs. Rutter & Co.

House, Weston Road, for Mr. G. Reeve.

Stoughton.—Three pairs of cottages, Barrack Road, for Messrs. R. Wood & Son.

SUSSEX.

Hastings.—"The Convent of the Holy Child," Magdalen Road: additions. Messrs. Adams & Jarrett, builders.

"The Metropole," Robertson Terrace: additions and alterations. Mr. F. Plowman, architect.

No. 26 Robertson Street: alterations. Mr. H. Ward, A.R.I.B.A., architect.

Laundry, York Road: additions. Messrs. A. W. Jeffrey & Son, architects.

WARWICKSHIRE.

Birmingham.—Workhouse: alterations and extensions, Western Road (£6,100).

Destructor works, Aston Church Road, Nechells: additional stabling (£2,300).

Electricity generating station, Summer Lane: Boiler-house (£12,900).

Chilvers Coton.—Church near Edward Street.

Erdington.—Public Elementary school.

WORCESTERSHIRE.

King's Norton.—Destructor works, Lifford: additional stabling (£4,700).

YORKSHIRE.

Cowling.—House, Fold Lane. Mr. J. Hartley (of Skipton), architect.

Hebden Bridge.—Royal Electric Theatre: extensions, for Messrs. Wadsworth & Shaw.

Hemsworth.—Workhouse: additions (£8,400).

Linthwaite.—House and shop, Hoylehouse. Mr. A. E. Rodgers (of Milnsbridge), architect.

Malton.—"New Globe Inn": additions and alterations.

Rotherham.—Rescue Station, Effingham Street and St. Ann's Road.

WALES.

Llanelli.—Boy Scouts' Hall, Murray Street (£4,000).

Port Talbot.—The "Temple of Fashion," Aberavon. Mr. F. B. Smith, architect.

Swansea.—Cinema Theatre, High Street.

SCOTLAND.

Airdrie.—Court House extension.

Dundee.—St. John's (Cross) Parish Church, Blackness Avenue. Messrs. H. & F. Thomson, architects.

Dunfermline.—Carnegie Trust College of Hygiene and School Clinics (£20,000).

Glasgow.—Electricity and generating station and water-cooling tower, Clutha Works, M'Lellan Street, Plantation, for Messrs. P. & W. M'Lellan.

Picture house and shops, Nos. 729 and 731 Govan Road, for the Govan Central Picture House, Ltd.

Works, No. 50 Helen Street: extensions for Messrs. R. Potter & Sons.

SCOTLAND—continued.

Greenock.—Showrooms, West Blackhall Street, for the Greenock Gasworks (£2,000).
Harris.—Academy extension (£15,000).
Riccarton Junction.—Board School.

IRELAND.

Ballymena.—Workhouse Infirmary. Messrs. Patterson & Grahame (of Belfast), architects.
Belfast.—Three houses, Ulster Avenue, for Mr. B. Stafford.
 House, Knutsford Drive, for Messrs. R. J. McConnell & Co.
 House, Onslow Gardens, for the Martin Estate Co., Ltd.
 Two houses, Kerrsland Parade, for Messrs. T. Henderson & Co.
 House, Ravenhill Park, for Messrs. R. J. McConnell & Co.
 Two houses, Oldpark Road, for the Print Works Co., Ltd.
 House, Westland Road, for Messrs. R. J. McConnell & Co.
 Nine houses, Bristol and Court Streets, for Mr. H. Barron.
 School, Edinburgh Street, for the Ulsterville Presbyterian Church.
 National School. Mr. J. L. McDonnell, M.R.I.A.I., architect. Messrs. R. Corry, Ltd., contractors.
Brittas.—Sanatorium, Crooksling: extensions for the Dublin Joint Hospital Board.
Cork.—Cinematograph Theatre. Messrs. A. & H. Hill, architects.
 Cinematograph Theatre, Merchant Quay. Mr. Magahy, architect. Mr. D. Hegarty, contractor.
Dublin.—Sixty-three working-class dwellings, Weavers' Square (£11,500).
Pomeroy.—Church. Messrs. W. H. Byrne & Son (of Dublin), architects.
Queenstown.—Working-class houses (£7,000). Council engineer.
Tuam.—Artisans' dwellings (£8,000). Mr. P. Costelloe, C.E. (of Galway), architect.
Waterford.—Working-class dwellings (£21,000). Borough surveyor.

BUILDING CONSTRUCTION IN SOUTH CHINA.

THE United States Consul-General at Hong Kong, in a recent report to his Government, states that methods of building construction in Hong Kong and South China ports have undergone a great change during the last year or two. Formerly most buildings were made of brick or stone, and the use of steel in construction was exceptional, but very few big buildings have been constructed recently in which structural steel was not used, and the use of reinforced concrete is becoming more and more general. European metal is preferred for concrete reinforcement of heavier types, but American materials are chiefly used for the reinforcement of floors, ceilings, and non-bearing walls, also for bridges, galleries, verandahs, &c. Plans for construction work of all kinds in both Government and private enterprises under the new régime at Canton and in other ports call for an increased use of these materials. There are no reliable data as to the present volume of this demand, but it is considerable, and will, according to the report, undoubtedly increase greatly in the near future.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Root, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 28,888. Dec. 22, 1911.—Improvements in Concrete Piles for Foundations and similar purposes. G. C. Vernon-Inkpen, 40 Commercial Road, Portsmouth, Hants, architect. This invention has for its object the employment of steel of ordinary commercial sections to resist tensile and torsional strains for the reinforcement of concrete screw piles so arranged and disposed as to be easily and economically assembled to simplify its construction, and so capable of being formed together without requiring specially skilled labour for the purpose in the construction of a completed

reinforced concrete pile or column. This invention particularly relates to worms, flanges, or blades for use in secur-

FIG. 1.

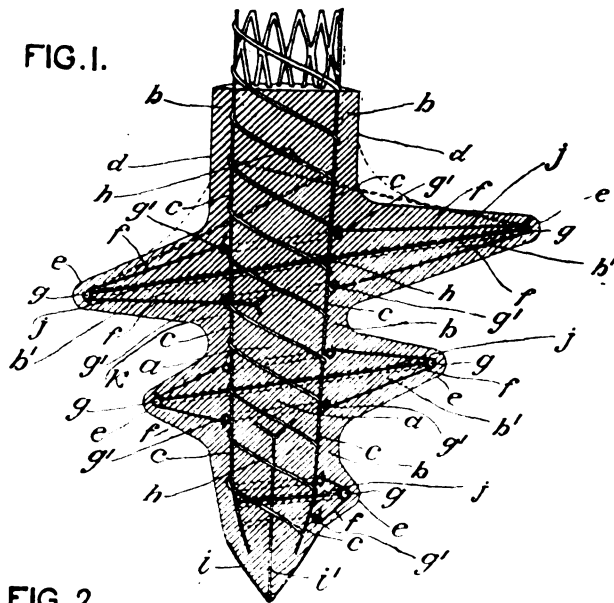
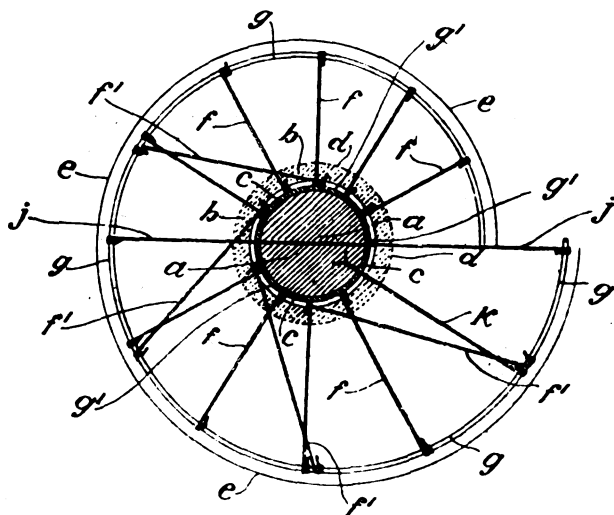
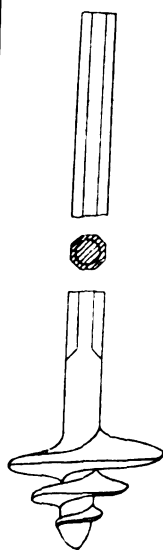


FIG. 2.



ing foundations for walls, piers, columns and quays for works of a subaqueous nature, or in soils above the surface of water, particularly through marshy or boggy stratus. Fig. 1 is a sectional elevation of the pile shaft and reinforcement of the concrete screw flanges or blades. Fig. 2 is a sectional plan of the same. Fig. 5 is an elevation of the pile.

FIG. 5.



h is the helical coil reinforcement of the pile shaft to resist torsion wound in the reverse direction to that of the screw thread, being continuous in length and preferably formed with a number of metal rods interlaced, or otherwise perforated or expanded metal strands of wire or bands is the steel-pointed shoe. i is the steel rod or bolts with forked end. j is the radiating arm passing through concrete pile mass. k is the radiating arm with split or forked end in concrete pile mass. July 24, 1912.

PATENT SPECIFICATIONS PUBLISHED SEPTEMBER 26, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 19,234. Aug. 28, 1911.—G. L. Gilberthorpe, Claude Street, Chatswood, and H. C. Marshall, Fullers Road, Chatswood, near Sydney, New South Wales. Collapsible sliding gates and barriers.

19,280. Aug. 29, 1911.—Percy Knowles, 2a Church Street, Isleworth, Middlesex. Surfaces for the transmission of heat.

19,462. Aug. 31, 1911.—Date claimed under International Convention Sept. 20, 1910. August Wolf, Government architect, 7 Jockmanstr., Liegnitz, Germany. Tools for boring earth and soft rocks.

19,927. Sept. 7, 1911.—W. J. Earles, the Alexandra Palace Hotel, Station Road, Wood Green, N.; Hugh Robertson, High View, Enfield Highway, N.; F. F. Mote, 90 Woodside Road, Bowes Park, N.; and T. A. Cartwright, 76 Woodside Road, Bowes Park, N. A turpentine substitute for paint, &c.

19,939. Sept. 7, 1911.—Parkinson and W. & B. Cowan, Ltd., Bellbarn Road Works, Birmingham, and S. B. Langlands, 52 College Street, Glasgow. Lighting devices for street and analogous incandescent gas lamps.

19,972. Sept. 7, 1911.—J. Stone & Co., Ltd., Deptford, S.E., and E. C. MacCormac, 122 Harborough Road, Streatham. Flushing syphon especially applicable to sewage tanks.

20,137. Sept. 11, 1911.—Florencio Escalada, the Waldorf Hotel, Aldwych. Lifts, hoists, water-raising devices, and so forth.

20,155. Sept. 11, 1911.—Date claimed under International Convention March 8, 1911. Daimler-Motoren-Gesellschaft, Fabrikstr., Unterturkheim, Germany. Anti-vibration or jamming device for doors.

21,103. Sept. 25, 1911.—James McCulloch, 1 Maxwell Place, Glasgow. Stoking device for use in connection with grates, stoves, and the like.

21,605. Sept. 30, 1911.—S. W. Cole, Wenlock Brewery House, Wenlock Brewery, City Road, N. Apparatus for washing or purifying and cooling air and gas.

21,939. Oct. 5, 1911.—Walter Jones, Titan Works, Amblecote, Staffs., and S. J. Sigismund Mills, Rose Cottage, South Avenue, Stourbridge. Double-faced sluice valves.

22,085. Oct. 6, 1911.—W. C. Johnson, Broadstone Farm, Coleman's Hatch, Sussex. Means for extinguishing fires.

22,792. Oct. 16, 1911.—Chas. Hickling, 90 Burford Road, Nottingham, and G. J. Tomlinson, 41 Orzen Street, Nottingham. Extraction of gases from sewage.

23,115. Oct. 19, 1911.—Georg Schiefferdecker, 21 Louisenstr., Posen, Germany. Window fastenings.

25,217. Nov. 13, 1911.—J. B. Kirby, Whitney Power Block, Cleveland, Ohio, U.S. Pneumatic cleaners.

25,439. Nov. 15, 1911.—Edward Ballard, 81 Avenue Road, King's Heath, Birmingham. Device for preventing the shaking and rattling of windows.

27,755. Dec. 11, 1911.—John Shanks, Tubal Works, Barrhead, Renfrewshire. Valve fittings for cisterns for flushing water closets, urinals, and the like.

4. Jan. 1, 1912.—George Emmerson, 3 Brook Road, and W. R. Moberley, Woodsetton, Worcestershire. Brick perforating machines.

CORRESPONDENCE.

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Architects and Surveyors' Approved Society.

SIR,—I shall be glad if you will kindly grant me a short space to remind those who have applied for application forms for membership of the above Society that it is advisable that these forms should be filled in and returned at once, so that cards for the ensuing quarter (commencing October 13) may be issued to them. The daily additions to the membership list are exceedingly gratifying, but there are many persons connected with the architectural and surveying professions who are not yet members of any Society for the purposes of the Insurance Act, and I would urge them to apply for membership forms at once, as it is hardly necessary to point out that it is to their interest to join a Society which has been formed solely for their benefit.—Yours faithfully,

F. R. YERBURY,

Hon. Sec. (pro tem.).

18 Tufton Street, Westminster, S.W. :
October 3, 1912.

VARIETIES.

THE Scarborough Spa Company have sanctioned the expenditure of £8,000 on improvement schemes, which include the widening of the promenade and erection of a café.

A LOCAL GOVERNMENT BOARD inquiry has been conducted at Stamford into the application of the Town Council to borrow £5,500 for the extension of the sewage disposal works.

MR. ALFRED HANDS, M.I.E.E., F.R.Met.S., has been engaged to deliver lectures, illustrated by lantern slides and experiments, on "Thunder and Lightning," in a large number of towns in different parts of the country between October 7 and December 16.

THE Howden Rural District Council on Saturday decided to apply for a provisional order to acquire a site for a trial boring at Dale plantation, South Newbald, in connection with a water scheme estimated to cost £56,671. The engineer for the scheme is Mr. Percy Griffith, Parliament Street, Westminster.

MR. A. B. ROWE, architect, Worcester, has been appointed architect to the Worcestershire Territorial Association. The War Office have sanctioned the building in the county of drill halls at Bromsgrove, Redditch, Evesham, Pershore, and Tenbury, and have agreed to improvements to the Moseley Road (Birmingham) drill hall.

THE Perth School Board recommend the Education Department to approve a site at Muirton Bank as a site for the proposed academy for 700 pupils.

THE Bolton Electricity Committee have approved a scheme prepared by the borough electrical engineer for the construction of a large generating station at Back-o'-the-Bank. The cost, inclusive of plant, is put at £120,000.

A MEETING of the Orsett District Sub-committee was held at Grays last week. Tenders were opened for the erection of new Tilbury (Upper Ward) Council school. The lowest was that of Messrs. Brown Bros., for £3,150, as against the architect's estimate of £2,565. It was agreed that the tender should be referred to the architect.

THE Notts Education Committee, on the recommendation of the Buildings Sub-committee, as an economising experiment, have approved of a timber-framed school to accommodate sixty-four children at Bilsthorpe, the tender being let to Mr. J. Greenwood, of Mansfield, for £567 16s. 11d.

At a meeting of the Newcastle-on-Tyne Estate and Property Sub-Committee last week a plan was put forward for the development of the Walker Estate on garden city lines, fifteen houses to the acre. A suggestion for the erection of 9,000 modern houses was also put forward. No decision was come to, the matter being left for a printed report to be placed before the full Committee.

THE Local Government Board have officially communicated with the Town Clerk of Nottingham with reference to the improvement scheme of the City Council under the Housing Acts in respect of the Carter Gate and Manvers Street area. The Board have decided to confirm the scheme, and in due course a draft of the Order will be forwarded to the Council for their observations. The cost of the scheme is estimated at £139,933.

THE Chester Town Council have approved of a scheme under the National Insurance Act for a joint sanatorium district for the County of Cheshire and the county boroughs of Chester, Birkenhead, Stockport, and Stoke-on-Trent, and the borough of Wallasey. It is proposed to build a sanatorium for 150 beds at a cost of £25,000. Application will now be made to the Local Government Board to constitute a joint committee.

THE Staffordshire Education Committee have decided to recommend the County Council to purchase 4,840 square yards of land (mines and minerals being reserved) as the site of a new Council school at Halmerend, the price being 1s. per square yard; to purchase 5,657 square yards of land (including mines and minerals) at Fazeley for £300 as the site of a new infants' school; and to purchase 2,000 square yards of land (mines and minerals reserved) at 2s. a square yard, near Mount Pleasant Council school, as the site of a special subject centre at Quarry Bank.

LARGE new County school buildings at Hyde have recently been opened by the Chairman of the Cheshire County Council. For the exterior, red stock brick facings with biscuit-coloured terra-cotta dressings of varying shades, have been used, and a sea-green Westmorland slate for the roof. The design has as its distinguishing characteristic a symmetrical arrangement; simplicity and directness mark the plan. The general contractors were Messrs. S. Robinson, of Hyde. The whole work was from the designs and under the supervision of Mr. G. H. Willoughby, F.R.I.B.A., of Manchester.

THE Architect and Contract Reporter.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie—Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the

(Continued on page 7.)

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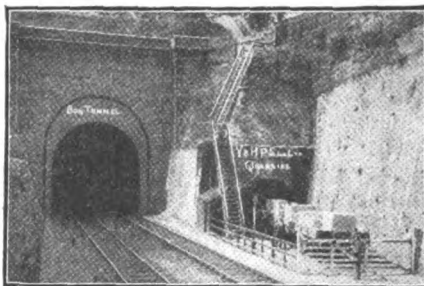
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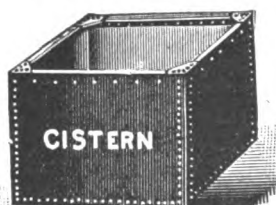
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second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ABERGAVERN.—Oct. 21.—For erection of a domestic arts centre at Abergavenny, for the Monmouthshire Education Committee. Deposit £1 1s. Mr. John Bain, F.R.I.B.A., County Council Offices, Newport.

AYLESBURY.—Oct. 18.—For erection of a nurses' sitting-room at the isolation hospital, Stoke Road. Deposit 10s. 6d. Mr. W. H. Taylor, engineer and surveyor, Town Hall, Aylesbury.

BANBURY.—Oct. 21.—For erection of forty cottages at Paradise Road (Messrs. G. Lucas & A. Lodge, architects, 14 Hart Street, Bloomsbury Square, W.C.). Send applications and £2 2s. deposit by Oct. 21 to Mr. A. Stockton, town clerk, Town Hall, Banbury. (See advertisement.)

BARGOED.—Oct. 17.—For building a workmen's library and institute. Deposit £2 2s. Messrs. James & Morgan, F.R.I.B.A., architects and surveyors, Charles Street Chambers, Cardiff.

BOURNE.—For erection of cottages in the following parishes, for the Bourne Rural District Council: Six cottages at Deeping St. James, four cottages at Market Deeping, four cottages at Carlbly. The Surveyor's Office, West Street, Bourne, Lincs.

BRADFORD.—Oct. 15.—For the plasterers' work required in erection of shed and warehouse at Dumb Mill, Frizinghall, for the Corporation. The City Architect, Town Hall, Bradford.

BRISTOL.—Oct. 16.—For the formation of muniment rooms under the rates office at the Council House. Mr. P. Addie, city valuer, The Exchange, Bristol.

BROOMHILL.—Oct. 26.—For the erection of out offices, boundary walls, &c., at the Council School. Send applications and £1 1s. deposit by Oct. 12 to Mr. C. Williams, secretary to the Northumberland Education Committee, the Moothall, Newcastle-on-Tyne.

BUGLAFTON.—Oct. 19.—For erection of a chancel end and vestries, and for alterations to the nave of the parish church. Deposit £1 1s. Messrs. A. Price & Son, architects, Sandbach.

BURNLEY.—For the various trades in erection of two small houses in Todmorden Road, for Messrs. Chadwick & Brother-ton. Mr. G. Parkinson, architect and surveyor, Mercantile Chambers, Burnley.

CHELTHAM.—Oct. 23.—For sundry repairing works and the provision of baths at the workhouse. Mr. Thomas Malvern, architect, 21 Winchcomb Street, Cheltenham.

CHINGFORD.—Oct. 30.—For erection of a public elementary school at South Chingford to accommodate 300 infants, for the Essex Education Committee. Send applications and £2 2s. deposit by Oct. 12 to Mr. H. J. Goodwin, clerk to the District Committee, Education Offices, Loughton.

CRAMLINGTON.—Oct. 26.—For general alterations to the Cramlington Colliery Council School. Send applications and £1 1s. deposit by Oct. 12 to Mr. C. Williams, secretary to the Education Committee, the Moothall, Newcastle-on-Tyne.

DEVON.—Oct. 24.—The County Education Committee invite revised tenders for the following work at Council Schools: Bridford—ventilation and new drainage, &c.; Broadhempston—alterations, ventilation, &c.; Combemartin (infants)—ventilation; Crediton—Landscro—new cloakroom, &c.; Drewsteignton—alterations, &c.; Holbeton—alterations, ventilation, &c.; Lydford—alterations, ventilation, new windows, playsheds, &c.; Stoke Gabriel—tar-paving; Stoke Rivers—enlargement, &c. Mr. Percy Morris, A.R.I.B.A., County Education architect, 1 Richmond Road, Exeter.

DINNINGTON.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with additions to Dinnington Council School—viz.: Builder, joiner, slater, plumber, plasterer, painter and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

EAST ELLOE.—Oct. 17.—For erection of cottages in the parishes of Gedney Drove End and Gedney Dyke, for the East Elloe Rural District Council. Mr. W. H. H. Davis, Spalding and Wisbech.

EAST LANTON.—Oct. 16.—For erection of two cottages at East Lanton, for the Midland Railway Co. The Engineer's Office, Derby Station.

ECCLES.—Oct. 14.—For taking down and removing the existing bowlhouse, pavilion, &c., at the Eccles recreation ground, and the construction of a new pavilion, bowlhouse, shelter, store, and alterations to the girls' playground, for the Parks Committee. Deposit £1. The Borough Surveyor's Office, Town Hall, Eccles, Lancs.

EDINBURGH.—Oct. 21.—For the erection of a janitor's house at Moray House training college, all trades to be included in one tender, for the Edinburgh Provincial Committee for the Training of Teachers. Mr. A. K. Robertson, architect, 29 Hanover Street, Edinburgh.

EGREMONT.—Oct. 19.—For the various works required in erection and completion of a residence at Bookwell, Egremont, Cumberland. Mr. N. Kitchen, A.M.I.Mun.E., A.R.S.I., &c., architect, Woodend House, Bigrigg.

GREAT YARMOUTH.—Oct. 22.—For alterations to Great Yarmouth Post Office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Great Yarmouth Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

HALIFAX.—Oct. 16.—For the various works required in extension of offices and new moulding shed, for Messrs. J. Sagar & Co., Ltd., Water Lane. Messrs. Jackson & Fox, Rawson Street, Halifax.

HENDON.—Oct. 21.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3s. Mr. G. Hornblower, F.R.I.B.A., 2 Devonshire Terrace, Portland Place, London, W.

HENDON.—Oct. 21.—For erection of central fire station at The Burroughs, for the Hendon Urban District Council. Deposit £3 3s. Mr. H. A. Welch, 20 Golder's Green Parade, Golder's Green, Hendon.

HICKLING.—Oct. 19.—For the restoration of Hickling Church, Norfolk. Mr. A. Howell, F.R.I.B.A., 32 Clitheroe Road, Stockwell, S.W.

HUDDERSFIELD.—Oct. 21.—For the masons', joiners', plumbers', slaters', plasterers', painters', concretors', electricians', heating engineers', and iron and steel founders' works required in erection of two-storey warehouse and offices, St. Andrew's Road. Messrs. Abbey & Hanson, 11 Cloth Hall Street, Huddersfield.

IPSWICH.—Nov. 11.—For erection of the St. Helen's Council School, for the Education Committee. Send applications and £1 1s. deposit by Oct. 19 to Mr. R. C. Wrinch, architect, 16 Museum Street, Ipswich.

IRELAND.—Oct. 19.—The Pembroke Urban District Council invite tenders for the erection of a gate and weighbridge house at their electricity works, South Lotts Road, in the urban district; also the erection of a boundary wall surrounding the said works. The Clerk, Town Hall, Ballsbridge, Co. Dublin.

IRELAND.—Oct. 26.—For additions to Raffeen House, near Monkstown, co. Cork. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.

IRELAND.—Oct. 31.—The Pembroke Urban District Council invite tenders for the erection of a pier, promenade, sea and other baths, and pavilion, and repairs to existing pier, and all works incident to and connected therewith, at Merion, co. Dublin. Deposit £3 3s. Mr. J. C. Manly, clerk, Town Hall, Ballsbridge, Pembroke, co. Dublin.

IRELAND.—Nov. 4.—For erection and furnishing of National school buildings at Coolnoohil, Kilgarvan, co. Kerry. The Office of Public Works, Dublin, and Kilgarvan Royal Irish Constabulary Barrack.

ISLE OF WIGHT.—For execution of additions and alterations to St. Andrew's Church, Norton, Freshwater. Mr. J. W. Newman, Station Road, Freshwater, I.W.

KENDAL.—Oct. 15.—For building a house in the old hospital grounds. Mr. J. Stalker, M.S.A., architect, Kendal.

KNOTTINGLEY.—Oct. 12.—For the excavator's, bricklayer's, carpenter's and joiner's, plumbers and glazier's, slater's, plasterer's, painter's, concretor's, heating engineer's, electrician's, iron and steelfounder's works required in erection of a picture house at Knottingley, Yorks. Send applications by Oct. 12 to Messrs. Lunn & Kaye, architects and surveyors, 14 John William Street, Huddersfield.

KNOWLE.—Oct. 22.—For erection of three pairs of semi-detached cottages at the County Asylum, Knowle, near Fareham, Hants. Mr. N. Atkins, architect, 62 West Street, Fareham.

LONDON.—For building two seven-roomed houses in Monkville Avenue, N.W., turning off the Finchley Road, Golder's Green, near the Garden City. Mr. A. Monk, 55 Fitzjohn's Avenue, Hampstead.

LONDON.—Oct. 15.—For the extension of Battersea district post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W., and H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Oct. 16.—For repairing, maintaining, and decorating police stations, police courts, houses, buildings, &c., situated within four miles of Charing Cross, for three years from Jan. 1, 1913, for the Receiver for the Metropolitan Police District. Deposit £1 1s. The Police Surveyor, New Scotland Yard, S.W.

LONDON.—Oct. 22.—For the construction of a public underground convenience at South Kilburn, N.W., also for the erection of a convenience above ground at Church End, Willesden, N.W., for the Willesden District Council. Deposit 5s. Mr. O. C. Robson, M.I.C.E., engineer to the Council, Municipal Offices, Dyne Road, Kilburn, N.W.

LONDON.—Oct. 25.—For the erection of the North-Western district post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W., and H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Oct. 25.—The Commissioners of H.M. Works and Public Buildings invite constructional schemes and tenders based thereon for the excavation for and the construction in reinforced concrete of the foundations, retaining walls, columns, floors, roof, stairs, &c., for the new spirit museum at the Natural History Museum, South Kensington. Any system or systems of construction may be adopted for the

whole or part of the work, and full details must be furnished immediately for examination, if necessary. Deposit £2 2s. H.M. Office of Works, &c., Storey's Gate, S.W.

LOSTWITHIEL.—Oct. 21.—For erection of a dwelling-house at Penquite, Lostwithiel, Cornwall. Mr. W. Littleton, Sweet's House, Bodmin.

MACHEN.—Oct. 21.—For erection of about thirty semi-detached dwelling-houses near the Council schools at Machen, Mon., for the Machen No. 1 Building Club. Mr. Philip J. Jones, architect, Church Street, Pontypridd.

MANCHESTER.—Oct. 18.—For the execution of sanitary alterations in connection with the following premises, for the Corporation—viz.: 1 to 25 Duke Street, 54 George Street, and 51 River Street, Hulme; 65 to 75 Leaf Street, Hulme; 1 to 5 Norman Street, 50 to 68 Eliza Ann Street, and 435 to 451 Rochdale Road, Manchester. The Manager of the Drainage Department.

MIDDLESBROUGH.—Oct. 19.—For the various works required in erecting business premises and hotel, 29 and 31 Corporation Road, and 65 Albert Road, for Messrs. Freeman, Hardy & Willis, Ltd. Send names by Oct. 19 to Messrs. Moore & Archibald, architects, Prudential Chambers, Albert Road, Middlesbrough.

MILNSBRIDGE.—Oct. 16.—For the various works required in erection of workshop, &c., Milnsbridge. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

PORTLAND.—Oct. 18.—For erection of an elementary school at Portland, for the Education Committee. The County Offices, Dorchester, at the offices of Messrs. Fletcher & Brett, Wimborne, and at the Police Station, Portland.

PORTSMOUTH.—Oct. 21.—For erection of a public elementary school at North End, for the Education Committee. Deposit £3 3s. Mr. J. W. Walmisley, F.R.I.B.A., architect, 7 King's Terrace, Southsea.

RAWDON.—Oct. 15.—For the various works required in erection of proposed school at Rawdon, Yorks., for the Society of Friends. The seating accommodation is 150. Send names by Oct. 15 to Mr. H. Chippindale, architect, Guiseley.

REDCAR.—Oct. 12.—For the various works required in making alterations to the "Dove" Café, 50 High Street. Send names by Oct. 12 to Messrs. Moore & Archibald, architects, Prudential Chambers, Albert Road, Middlesbrough.

SCOTLAND.—Oct. 15.—For the supply and erection of three galvanised corrugated sheds in Glasgow, for the Corporation. Mr. D. McColl, superintendent of cleansing, 38 Cochrane Street, Glasgow.

SPALDING.—Oct. 15.—For erection of thirty-six cottages adjoining the Holbeach Road, for the Urban District Council. Deposit £1 1s. Mr. J. B. Corby, F.S.I., architect and surveyor, Stamford and Spalding.

STANTON.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with new school at Stanton—viz.: Builder, joiner, slater, plumber, plasterer, painter, and ironfounder and smith. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Doncaster. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

STANLEY.—Oct. 15.—For the remodelling and erection of new infants' school (for about 200 scholars) at Stanley, near Crook. Sole tenders. Mr. W. Rushworth, Shire Hall, Durham.

STOCKPORT.—Oct. 15.—For the labour and materials required in the erection of shelter, tool house, and conveniences at Grimesbottom recreation ground. Mr. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

SUNDERLAND.—Oct. 30.—For erection of additions to the workhouse infirmary, Hylton Road. Deposit £2 2s. Messrs. W. & T. R. Miburn, F.R.I.B.A., architects, 19 Fawcett Street, Sunderland.

SUTTON VENEY.—For erecting a pair of cottages at Sutton Veney, Wilts. Messrs. J. Harding & Son, architects and surveyors, Salisbury.

TORPOINT.—Oct. 14.—For extending and altering the Foresters' Hall. Mr. W. White, East Cornwall House, Torpoint.

WALES.—For erection of a mission room in Free School Court, Bridgend, for the trustees of the C.M. Mission. Messrs. Cook & Edwards, M.M.S.A., architects, Bridgend, Glam.

WALES.—Oct. 18.—For erection of a mixed and infants' school (210 places) and cookery kitchen at Caehopkin, Abercraze, for the Breconshire Education Committee. Mr. C. W. Best, M.I.C.E., surveyor to the committee, County Hall, Brecon.

WALES.—Oct. 21.—For erection of eighty-six cottages at Pontcymmer, near Bridgend. Tenders may be submitted for the whole, or, alternatively, for forty-nine cottages and thirty-seven cottages. Deposit £2 2s. Ffaldau Collieries Co.'s Offices, Pontcymmer.

WANSTEAD.—Nov. 7.—For erection of a fire brigade station in Wanstead Place, at the corner of Fitzgerald Road. Deposit £1. Mr. C. H. Brassey, F.S.I. surveyor, Council Offices, Wanstead, N.E.

WHEATLEY.—Oct. 18.—The West Riding Education Committee invite whole or separate tenders for the following works at the Wheatley Beckett Road Council School—viz.: Heating engineer and builder. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

WHITWORTH.—Oct. 24.—For the erection of an elementary school, to accommodate 360 children, at Whitworth, near Rochdale. Deposit £2. Mr. Henry Littler, county architect, Ribblesdale Place, Preston.

WINDSOR.—Oct. 21.—The Secretary of State for War invites tenders for the following work—viz.: Erection of new hospital for cavalry and mortuary block, with sitework, roads, drainage, fencing, &c., at Combermere Barracks, Windsor, in the London district. Send applications and 10s. deposit by Oct. 14 to the Director of Barrack Construction, 80 Pall Mall, London, S.W., or at the Barrack Construction Office, Victoria Barracks, Windsor.

TENDERS.

COCKERMOUTH.

For the carrying out of the sewerage works at Great Clifton, for the Cockermouth Rural District Council.

Johnston	£2,101 0 0
Ferguson	2,058 0 0
DOLOGHAN & MULCASTER, Cleator Moor (accepted)	1,960 0 0

KETTERING.

For erection of an art gallery, for the Urban District Council.

Martin	£3,240 0 0
Henson	3,138 0 0
Smith & Edmunds	3,045 0 0
Bamford	3,000 0 0
Brown & Sons, Wellingborough	2,947 10 0
BROWN & SONS, Wellingborough, amended tender (accepted)	2,450 0 0

LIVERPOOL.

For erection of a mortuary at the workhouse, Brownlow Hill. Mr. T. W. HAIGH, architect, Liverpool.

Woods, Benson & Co.	£1,586 0 0
Hall & Sons	1,573 0 0
Pople & Co.	1,535 0 0
Marr & Son	1,525 0 0
Rimmer Bros.	1,507 0 0
Travis & Wevill	1,460 0 0
C. & G. L. Desoer	1,457 0 0
HALL & JAMIESON, Liverpool (accepted)	1,447 0 0

LONDON.

For shop front to be erected at No. 389 Brockley Road, S.E., for Messrs. Edwards & Sons, Ltd. Messrs. NORFOLK & PRIOR, architects, 4 Station Buildings, Catford Bridge, S.E.

Heath & Sons	£201 12 6
Sage & Co.	197 0 0
Walker	172 0 0
Christmas	112 0 0

For constructing verandahs and alterations to fire-escape staircases at the Brook Fever Hospital, Shooter's Hill, Woolwich, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, E.C.

Kirk & Randall	£1,160 0 0
Haward Bros.	1,044 0 0
Jones & Co.	998 0 0
Shillitoe	989 0 0
Cadogan Ironworks	979 10 0
Wilson & Smith	973 0 0
General Ironfoundry Co.	971 0 0
Wall	920 0 0
HEBBERG & Co., LTD., Chertsey (recommended)	796 0 0
Engineer-in-chief's estimate	760 0 0

PETERBOROUGH.

For construction of sewerage works and pumping machinery, for the Rural District Council. Mr. G. A. PENWILL, engineer, Peterborough.

Sewers, Pumping Stations, &c.

Pattinson & Son	£11,798 0 0
Bell & Sons	10,138 0 0
Henson & Sons	9,871 0 0
Moss & Sons	9,592 0 0
Riley	9,021 0 0
C. CHAMBERLAIN, Leicester (accepted)	8,752 0 0
Dickson	8,690 0 0
Porter	8,119 0 0

Engines and Pumping Machinery.

Mather & Sons	1,775 0 0
Allen & Sons	1,660 0 0
Rees-Roturbo Co.	1,450 0 0
Gwynnes	1,178 0 0
TANGYES, LTD., Birmingham (accepted)	1,070 0 0
Sun Patent Co.	890 0 0

PONTESFORD.

For the construction of new stables and garage. Messrs. DICKENS-LEWIS & HAYNES, architects, Shrewsbury.

Pace	£1,000 0 0
Bickerton	990 0 0
Bowdler & Co.	980 0 0
TREASURE & SON (accepted)	972 0 0

All of Shrewsbury.

PORTLAND.

For the erection of pumping station and cottage and other works, for the Urban District Council. Mr. R. S. HENSHAW, waterworks engineer, Portland.

Chamberlain	£8,541 0 0
Conway & Co.	8,419 0 0
JESTY & BAKER, Portland (accepted)	8,163 0 0

ROCHFORD.

For alterations and additions at the female infirmary block at the workhouse infirmary, for the Guardians. Mr. W. J. WOOD, architect, Southend-on-Sea.

MYALL BROS. (accepted)	£2,970 0 0
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STONE.

For carrying out the Lightwood sewerage scheme.

TAYLOR & SON, Basford (accepted)	1,570 15 6
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SUTTON COLDFIELD.

For the erection of a lodge at Boldmere entrance to the park.

J. C. HILL, Sutton Coldfield (accepted)	£478 0 0
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WALES.

For erection of workhouse infirmary, for the Bangor and Beaumaris Guardians. Mr. FRANK BELLIS, architect, Bangor.

THORNTON & SONS, Liverpool (accepted)	£17,589 0 0
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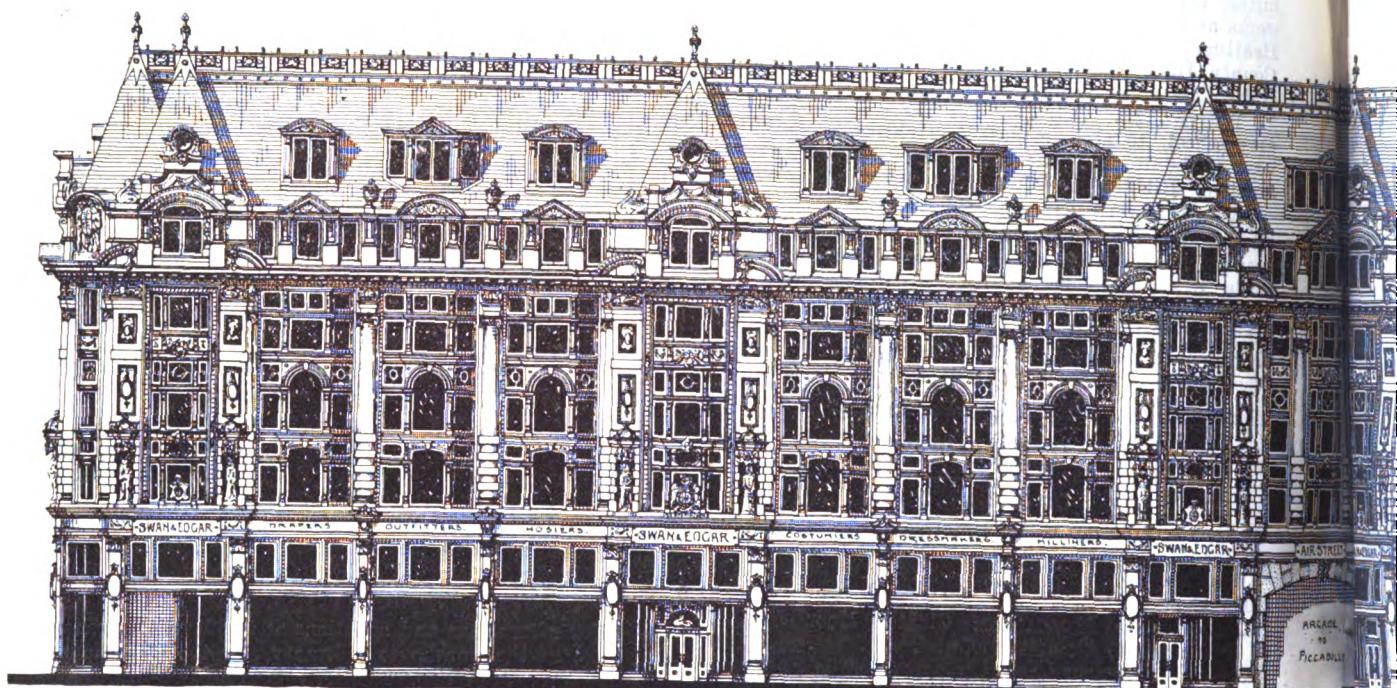
For the erection of thirty-one houses, for the South End Building Club, in continuation of Arthur Street, Tredegar. Mr. A. F. WEBB, M.S.A., architect and surveyor, Blackwood.

Arrowsmith	£253 7 6
Vodden	246 12 0
Newcombe & Son	220 0 0
W. & J. Jenkins	213 0 0
T. DICKINSON, Tredegar (accepted)	204 15 0

At a meeting on Tuesday of the Gloucester Board of Guardians it was reported that seventeen tenders had been received for the erection of the proposed workhouse infirmary, to accommodate 149 beds, for which Mr. W. B. Wood, A.R.I.B.A., of Gloucester, is the architect. The lowest tender was from Messrs. Byard & Son, Gloucester, amounting to £24,457, including provisional items such as heating, electric lighting, and sanitary fittings, cost of fencing and road making, bringing the total to £25,990. The highest tender was that of Messrs. Allen & Co., Westminster, £32,280, other tenderers including Messrs. Barnsley & Sons, Birmingham, £30,314; Messrs. Collins & Godfrey, Tewkesbury, £28,728; Messrs. Tilt Bros., Bromsgrove, £28,424; Messrs. Bowen & Sons, Birmingham, £27,829; and Messrs. Crane & Co., Ltd., Nottingham, £27,322. It was decided that, subject to the sanction of the Local Government Board, Messrs. Byard & Son's tender be accepted.

MR. RALPH HUDSON has been selected out of forty-six applicants for the post of surveyor and inspector of nuisances at Skegness. Mr. Hudson is at present chief assistant to the city engineer and surveyor at York.

PROPOSED COMPLETION OF "THE QUADRANT" REGENT ST. W., IN WITH



— Note — IT IS PROPOSED TO REMOVE THE 2 EXISTING ARCHES

INSTITUTION OF MUNICIPAL ENGINEERS.

A MEETING of the northern district of the Institution of Municipal Engineers was recently held in the Town Hall, Newcastle-on-Tyne.

A letter from Mr. Wyand respecting allowances to members for attending meetings in London came up for further discussion, and the following resolutions were passed:—

(1) "That the district secretary be deputed to attend a meeting of the Council with a view to discussing the question of the payment of at least a proportion of the travelling expenses of the distant members; (2) that the Executive Council be asked to consider the advisability of amending the rules of the institution with a view to adopting a system whereby each district would elect their own representatives on the Executive Council, the number of representatives to be in proportion to the number of members in each district; (3) that the meetings of the Council be movable, and at least one in every quarter be held in —."

It was agreed to hold a joint meeting with the Yorkshire division at Harrogate on October 19.

The Secretary introduced the question of securing grants from the Road Board for secondary or district roads, and explained the position in the county of Durham, at the same time pointing out that the probability of any Council obtaining a grant for district roads was very remote unless Councils and their surveyors protested very strongly against the Road Board allowing the County Council to have entire control of monies allotted to that county. It was decided to take the application for a grant for Morton Palms Road in the Darlington rural district as a test case, and members present pledged themselves to see the county representatives representing their various districts before the County Council meeting, and endeavour to persuade them to vote in favour of giving a grant to this particular road.

THE REBUILDING OF THE QUADRANT, REGENT STREET, W.

A suggestion for the rebuilding of The Quadrant, Regent Street, W., as a continuation of and in harmony with the design of the Piccadilly Hotel, by Messrs. James Young & Sons, architects.

In any design for the completion of The Quadrant, the Piccadilly Hotel being accepted as a *fait accompli*, two main points have to be considered—namely, first, that the continuation shall be suitable to the trade requirements of a large drapery concern, as no doubt the firm now occupying the major portion of the block would acquire the whole; and, secondly, that the architectural treatment at Air Street and the proper linking up of the hotel with the new block forms the key of the situation.

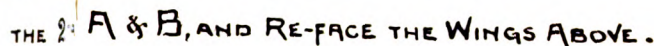
Accepting the position of trade requirements as a consideration requiring no discussion (as derelict property in all quarters and in quarters which would command premium rentals go to prove), the question is the combination of architecture and business, which ought not to be insuperable, and, so far as our solution goes on trade requirements, the tradesman might be the best judge.

From the architectural standpoint, and taking Air Street as the key of the situation, a central arch with side wings on either side, and with the building and roof carried over Air Street, as provided in the original design, is an absolute necessity, and no lowering of the roof at this point can be done without showing the end gable of hotel—which was, of course, never intended.

Taking this view in preparing our design, the difficulty was at once apparent—namely, that if the existing arch at the corner of Air Street were repeated on the other side, the carrying on of the present massive treatment of the hotel, with the inevitable repeat at the other end, at Piccadilly Circus—if no more—was involved. So to gain complete harmony with the main body of the hotel we commenced by removing the arch under the existing wing and substituting

WITH THE PICCADILLY HOTEL.

REPEATS FROM CENTRE LINE TO VIGO ST.
WITHOUT ARCHES & WITH $\frac{w}{2}$ SHOPS AS AT OTHER END.



THE Devon Education Committee were informed last week that tenders received for various works were from 10 to 50 per cent. above the estimates. Mr. P. Morris, A.R.I.B.A., the county education architect, stated that a dozen or more jobs have to be postponed owing to the amounts of the tenders exceeding the estimates.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE.

Crewe.—Council School, Derby Street, for over 1,000 places.

Stockport.—District dispensary.

Wilmslow.—Conservative Clubhouse.

CORNWALL.

Falmouth.—Pair of semi-detached houses, Western Terrace. Mr. C. R. Corfield, A.R.I.B.A., architect.

Pair of semi-detached houses, Western Terrace, for Messrs. H. Thomas & Son.

Newquay.—Ten workmen's dwellings, St. John's Road. Council surveyor.

St. Austell.—Technical Institute, West Hill.

DERBYSHIRE.

Bakewell.—Council School.

Codnor Park and Ironville.—Conservative Clubhouse.

DURHAM.

Durham.—St. Margaret's Church hall (400 sittings). Mr. W. H. Wood, F.R.I.B.A., architect. Mr. C. W. Gibson, contractor.

ESSEX.

Coggeshall.—Council School.

Cold Norton.—Council School for eighty places.

High Ongar.—Children's Homes for the Board of Guardians, Herd's Farm site.

Hornchurch.—Cottages. Romford Council surveyor.

Maldon.—Sixteen houses, Cherry Garden Road (£2,640).

Mr. T. R. Swales, Borough surveyor.

Witham.—Infectious diseases hospital, Howbridge Hall Lane.

GLOUCESTERSHIRE.

Kempey.—Parish Church restoration (£1,600).

HAMPSHIRE.

Bournemouth.—Houses, plots 293 and 294, Bloomfield Avenue, for Mr. A. R. Houlton.

House, plot 72, Chessel Avenue, for Mr. T. Cole.

House, plot 19, Chessel Avenue, for Mr. R. Old.

House additions, corner of Grand and Pine Avenues, for Mr. E. G. Evans.

House, plot 13, Truscott Avenue, for Messrs. A. & W. King.

Houses, plots 4 and 16, Wentworth Avenue, for Messrs. Burridge & Bovill.

House, plot 5, Portman Crescent, for Mr. G. Dolman.

House, Belle Vue Road, for Captain Griffiths.

Additions to "Bracken Court," Branksome Wood Road, for Mr. G. R. McDougall.

House, plot 21, Cardigan Road, for Mr. A. Ellison.

Additions to "The Grange," Grange Road, for Mr. C. W. L. Jensen.

Four houses, plots 19-22, Guildhill Road, for Mr. J. Newbury.

House, plot 14, Herberton Road, for Mr. T. Coles.

House, plot 385, Lowther Road, for Messrs. Lambert & Sons.

House, Maxwell Road, for Mr. H. T. Welch.

Additions to No. 9 Naseby Road, for Mr. A. Harris.

Additions to "Overstrand," Roslin Road, for Mr. E. K. Cross.

Three houses, plots 51 and 62, Scotter Road, for Mr. J. Stacey.

Pair of houses, plot 38, Spurgeon Road, for Mr. J. Stacey.

House, plot 144, Strouden Road, for Mr. C. V. Miller.

Additions to No. 30 Tower Road, for Mr. T. Pope.

Additions to "Cotford" and "Worcester," West Hill Road, for Mr. W. Saunders.

Pair of houses, plot 208, Wheaton Road, for Mr. H. Lazenby.

Pair of houses, corner of Wheaton and Rebbeck Roads, for Mr. W. T. Boys.

Alterations to premises, corner of Old Christchurch and Post Office Roads, for Messrs. Parris Bank, Ltd.

Portsmouth.—Church of St. Alban, Copnor.

HEREFORDSHIRE.

Hereford.—Market Hall: alterations and repairs (£1,100).

Masonic Temple, Castle Street (£2,000).

KENT.

Faversham.—Baptist Church extension.

Gillingham.—The "Jolly Sailor" P.-H.: re-building.

St. Michael's.—House, Woodside, for Mr. Chase.

Tenterden.—Alterations to No. 2 Oaks Place, for Mr. R. Avery.

Council School.

National Schools: alterations.

Westgate-on-Sea.—Cottage, Waterworks Road, for Mr. Hutchins.

LANCASHIRE.

Bolton.—Cotton shed, Weston Street, for Messrs. Winder & McKean.

Additions to houses, Hawthorn Street, for Mr. R. G. Jones.

Twelve houses, Markland Hill Lane, for Messrs. J. Massey & Sons.

House, Junction Road, Deane, for Dr. J. E. Gould.

Twenty-four houses, Nunnery Road, Deane, for Mr. J. Higson.

Stretford.—Council School, Second Avenue, Trafford Park: enlargement by an additional eighty places.

LINCOLNSHIRE.

Lincoln.—Barracks: additions and alterations (£1,250). Workhouse infirmary.

MIDDLESEX.

Wood Green.—Town Hall: alterations and additions (£7,000).

NORTHAMPTONSHIRE.

Earls Barton.—Church Institute, Station Road (£600).

Mr. H. W. Sheffield, architect. Messrs. Elson & Knight, contractors.

Higham Ferrers.—Council Schools: re-modelling (£2,450).

SHROPSHIRE.

Dawley Parva.—St. Luke's Church: Sunday School.

STAFFORDSHIRE.

Cannock.—West Hill Council Schools: enlargement.

Rocester.—Council School for 122 places.

Tunstall.—Church.

Walsall.—Council Schools, Chuckery.

SURREY.

Croydon.—St. Paul's Church, Norfolk Road: additions, for Mr. J. H. Henwood.

Young People's Hall, Brighton Road, for Mr. W. Booth.

Four houses, Ashburton Avenue, for Messrs. Paish, Tyler & Co.

Eight houses, Ederline Avenue, for Mr. J. Watts.

Eleven houses, Kilmartin Avenue, for Mr. P. Richardson.

House, Grecian Crescent, for Mr. E. G. Soper.

House, Pollard's Hill North, for Mr. W. A. Brown.

Five houses, Blenheim Park Road, for Mr. J. Crampton.

Eleven houses, Headcorn Road, for Mr. W. Darnell.

Six houses, Northway Road, for Mr. G. J. Hall.

Three houses, Silverleigh Road, for Mr. P. Richardson.

Six houses, Whitworth Road, for Mr. C. S. Banks.

Three houses with shops, Shirley Road, for Mr. W. Hine.

Redhill.—Congregational Church: Sunday school alterations and extensions (£2,500).

SUSSEX.

Barns Green.—Congregational Mission Church.

Brighton.—Headquarters for the Imperial Cadet Corps (£2,500).

Haywards Heath.—Post Office, Boltro Road.

WARWICKSHIRE.

Bulkington (Nuneaton).—Council Elementary Schools: extension (£850).

Coventry.—Municipal Buildings. Messrs. Garratt, Simister, Buckland & Farmer (of Birmingham), architects. Messrs. Willcock & Co. (of Wolverhampton), contractors.

WESTMORLAND.

Kendal.—House, Old Hospital grounds. Mr. J. Stalker, architect.

YORKSHIRE.

Barnoldswick.—Parish Church.

Congregational Church and school, Gisburn Road (£6,000).

Birkenshaw.—House, Drub Lane. Messrs. Howorth & Howorth (of Cleckheaton), architects.

YORKSHIRE—continued.

Deusbury.—"Crown and Cushion" Inn, Bradford Road: re-building. Mr. J. L. Fox, architect.
Hulifax.—Cottage-flats, Wheatley. (Accommodation for 80 persons.)

WALES.

Blaenrhondda.—District and Fernhill workmen's Branch Institute. Mr. W. D. Morgan (of Pentre), architect.
Rhuddlan.—The "New Inn": extensions.

SCOTLAND.

Cupar.—House, Bonnygate, for Mr. J. J. Campbell. Separate trade contractors.
Dunbar.—Barracks: additions. Messrs. W. Cruickshanks & Sons (of Edinburgh), contractors.
Dundee.—Hippodrome Picture Theatre, Hawkhill: addition for Mr. A. Binnall.
Alterations to shop, Perth Road, for Messrs. A. & R. Licksey.
Stobswell Works: addition for the Buist Spinning Co., Ltd.
Edinburgh.—Sheriff Court extension.
Glasgow.—Twelve self-contained houses. Mr. G. Allan, builder.
Greenock.—Artisans' and asylum attendants' houses (£5,000).
Phthisis isolation blocks for the Combination Hospital Board.
Monkton and Prestwick.—Church Hall, Alexandria Avenue, Prestwick (£1,200).
Rosyth.—Naval Institute (£15,000).

IRELAND.

Ardglass.—Shop and dwellings. Messrs. Browne Bros., architects.

PATENT SPECIFICATIONS PUBLISHED
OCTOBER 3, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 3,441. Feb. 10, 1912.—J. E. Caps, 329 Fourth Street, Wilmette, Cook, Illinois, and C. A. Cartwright, 500 W. Huron Street, Chicago, U.S.A. Systems of heating water and an apparatus therefor.

8,154. April 4, 1912.—W. & F. Walker, Ltd., and J. T. Freestone, Colonial House, Water Street, Liverpool. Charging air with sanitary or hygienic or aromatic vapour.

9,638. April 23, 1912.—Carter White and J. W. Patterson, 121 Grosvenor Park, S.E. Manufacture of white lead.

10,710. May 6, 1912.—Josef Weicht, Sebnitz, Saxony. Window and like fastenings.

10,844. May 7, 1912.—J. A. Dunning, Bertie, North Carolina, U.S.A. Dies for machines for working clay.

13,200. June 5, 1912.—J. C. Harrison, William Killey, and H. P. M. Fenton, Monarch Works, 12 Charles Street, Chorlton-on-Medlock. Flushing tanks.

13,477. June 8, 1912.—Eduard Schmelz, 39 Emmersanstr., Mayence, and August Schnepf, Bretzenheim, near Mayence, Germany. Repairing corrugated iron roofs.

16,526. July 15, 1912.—Rudolf Bachmann, 18 Kettenbrückengasse, Vienna IV. Ruling devices for preparing drawings.

19,853. Sept. 6, 1911.—Date claimed under International Convention Sept. 6, 1910. Emile Klée, 12 Rue de la Pepiniere, Brussels. Hollow reinforced concrete floors and ceilings.

20,172. Sept. 11, 1911.—A. F. Berry, 27 Woodville Road, Ealing, W. Electrically heated cooking ovens.

20,196. Sept. 12, 1911.—J. H. Bennetts, 228 Maryvale Road, Bournville. Method of securely fixing door and similar furniture to their respective latch and the like spindles.

20,202. Sept. 12, 1911.—J. W. Moseley, Pennine Edge, Romiley, Cheshire. Wall constructions for houses and other buildings.

20,267. Sept. 12, 1911.—A. H. Mitchell, 25 Wrottesley Road, Plumstead. Luffing cranes.

20,535. Sept. 16, 1911.—A. Wiefenbach, 1730 First Avenue, So. Seattle, King, Washington, and M. J. Farrell, 300 Thirty-Fifth Avenue, So. Seattle, Washington, U.S.A. Composition for plaster.

20,630. Sept. 18, 1911.—F. Skillbeck, The Bungalow, Etherley Lane, Bishop Auckland. Plastic composition for roads, footpaths, roofs, &c.

21,200. Sept. 26, 1911.—F. C. Le Bailly, 15 Bond Street, St. Helier, Jersey. Mode of glazing roofs, windows and the like.

21,550. Sept. 30, 1911.—F. H. Shorland, the Manchester Stove Works, Oldham Road, Failsworth, near Manchester. Fireplaces.

21,866. Oct. 4, 1911.—I. H. Storey, White Cross Mills, and W. E. McCalla, Queen's Mill, Lancaster, and A. Griffiths, Burton Grange, Burbage Road, Herne Hill. Facing plates for attaching to the surfaces of walls.

23,524. Oct. 24, 1911.—William Goodwin, 36 Lime Street, E.C. Elevator.

NEW CATALOGUES.

MESSRS. CHANCE BROTHERS & CO., LTD., Glass Works, near Birmingham, are to be warmly congratulated on the catalogue de luxe which illustrates their vitreous tiles and mosaic. Vitreous tiles are available for walls, floors, ceilings, and fireplaces. It is unfortunate that this highly artistic method of decoration is as costly as it is. Apparently it must still remain outside the reach of the humbler houseowner so long as the only quality is the best. Messrs. Chance make their tiles of solid glass throughout, and the colour goes right through the substance. It is, of course, on their colour and grain that this material depends for effect. The catalogue convincingly shows how well the architect is now served. Some of the dado designs are as remarkable for beauty as for restraint, the colours subtly blending and the patterns pleasantly contrasting. The tiles, being non-absorbent, are available for exterior, as well as inside use. They are made in two forms: (1) with regular edges, and (2) with antique rough-cut edges, giving an irregular jointing. A special feature is made of the regular-edge moulded tiles, cappings, and skirtings. The second half of the catalogue is devoted to vitreous mosaic, which is manufactured both in square cubes and in irregular-shaped tesserae. Besides making an artistic flooring, the mosaic can be very effectively employed for fascias, signs, name-boards, &c. Here, again, the makers get a wide variety of tints, and are enabled to provide an infinite variety of pattern. The catalogue is most excellently produced, and is worthy of the reputation of the firm. A copy will be sent to any architect on application.

Although the Old Delabole Slate Co., Ltd., possess quarries which were being used some centuries ago, it is obvious that the present year finds them as much alert and as eager to oblige as if they had to establish a new business. Their latest booklet, No. 96, is in every way an attractive compilation. It is full of wise saws, interesting photographs, and convincing arguments. The ordinary half-tone or black and white illustration cannot do justice to a roof covering, which necessarily depends for its effect on texture. Realising this fact, the Company have included a very delicately coloured representation of three varieties of the slates obtained at Delabole—viz., the uncommon "Greens," the still rarer "Reds," and the familiar "Green-Grey." No one can now say that slates must be hard and unsympathetic in appearance. If rightly selected and rightly used, this material is capable of most artistic results. There is a special art in designing a slate roof, as well as in choosing the best covering. The Old Delabole Slate Co. help the architect in no small degree by laying out his roof. If a plan of the roof is sent to them, no matter what the shape, their "roof-planning department" lay it out in graduated courses with slates of varying lengths and breadths. These Cornwall quarries have a fine record behind them, and we believe the future will bring even greater success.

Modern liners have often been called floating hotels, and the story of their sumptuousness has long aroused the wonder, if not the envy, of the untraveller. But there is one convenience which is no longer a luxury, for it has almost become a necessity, and that is a lift. The pioneers in this class of engineering work are Messrs. R. Waygood & Co., Ltd. An illustrated pamphlet, entitled "Lifts on Liners," gives a comprehensive survey of their many achievements in this direction. The first ocean liner to be provided with an electric passenger lift was the ss. *Amerika*, of the Hamburg-American line. The same company are installing three Waygood passenger lifts on the *Imperator*, which will be the largest passenger vessel afloat. The huge *Olympic* (the largest steamer afloat at the present time) has three first-class passenger lifts, one second-class lift, and four Waygood service lifts.

A DEVELOPMENT IN GAS ENGINE DESIGN.

It has been generally understood that Messrs. Mather & Platt, Ltd., after experimenting with a new design of vertical gas engine, have progressed so far as to have five in successful operation, three of them running day and night at a large local works, while the last, after a series of most exacting trials in their shops, is now in course of erection at a local colliery.

The engine was described before the Iron and Steel Institute last week by Mr. A. E. L. Chorlton, the inventor. It is claimed for the new design that it possesses features destined in a large measure to extend the application of gas power. Summarised, the claims are:—(1) That the new engine is a very beautiful example of mechanical design. (2) That it possesses features in regard to simplicity and facility for overhaul quite unique as compared with all other gas engines. (3) That it solves the problem of designing a high-power vertical gas engine without excessive multiplication of parts.

Three important advantages rising out of this design are:—

1. Every stroke is a driving stroke; therefore, the engine is both smaller and less costly than any other of equal rating. It is, indeed, anticipated that this design will place the gas engine on an equal footing with the steam engine in regard to capital cost per unit of power.

2. The cylinders are castings of the simplest outline and character, mounted bodily within a casing which forms the water jacket. They are quite free from intricate passages, thick flanges, or ribbing, such as introduce internal foundry stresses, and, being symmetrically heated and cooled during working, it is confidently anticipated that they will relegate that bugbear of the gas engine maker—cylinder cranks—to ancient history.

3. There is not a valve of the mushroom type on any part of the engine. The sleeve valve controlling the gas and air charges deals with these in cool condition, and, even if the worst happens—that is to say, if they occasionally have to run on tarry gas—less trouble is anticipated than with earlier arrangements.

These engines possess numerous other features of interest. The firm propose to manufacture the Duplex engines in powers up to 4,000 b.h.p., and higher should the necessity arise. They will be designed to run at fairly high speeds, and will thus be applicable to all duties for which vertical steam engines are now used.

COMPETITION NEWS.

GOOLE.—The Urban District Council, who intend erecting municipal offices in Goole Market Place, has adopted the final report from the assessor, Mr. C. B. Flockton, F.R.I.B.A., regarding the eighty designs submitted. The two premiums, respectively £30 and £15, are both awarded to Mr. Ernest E. Fetch, A.R.I.B.A., of London.

TRADE NOTES.

THE lead glazing for the new choir boys' hostel, Clumber, for the Duke of Newcastle, has been executed by Mr. Andrew Stoddart, The Studio, Nottingham, under the direction of Mr. F. E. Littler, A.R.I.B.A. Mr. Stoddart is also supplying all the steel casements and leadlights for the Secondary School, Ilkeston, in course of erection.

THE heavy rains of August and September will no doubt cause much trouble through the flooding of basements, cellars, garage pits and stoke-holes. Damp walls are being complained of both from rising dampness and from penetrating rains. The present time is, therefore, a good opportunity to try one of the well-known waterproofing preparations, which are mixed with the cement and the usual aggregates. These products give glowing accounts of their results, and we have every reason to believe they have been successful for the purpose of waterproofing cement.

UNDER the direction of Mr. H. R. Finn, Lic.R.I.B.A., architect, St. Albans, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "Air-pump" ventilators and air inlets, has been applied to the new Adult School, St. Albans.

THE whole of the heating, ventilating, hot-water supply, and cooking apparatus at the United Service Club, Pall Mall, S.W., is being carried out by Messrs. Benham & Sons, Ltd., under Messrs. Thompson & Walford, architects, and Messrs. Kirkland & Capper, consulting engineers. Messrs. Benham's "Perfect" accelerators are being used on the heating apparatus.

VARIETIES.

THE Local Government Board have sanctioned a provisional order to enable the Darlington Town Council to borrow a sum of £50,000 for waterworks.

THE Newcastle-on-Tyne Town Council have authorised their Property Committee to call in an architect to advise them as to the best method of reconstructing the Town Hall buildings.

THE Stoke-on-Trent Education Committee have received the sanction of the Local Government Board to the borrowing of £16,000 for the erection of the proposed central School of Science and Technology.

UNDER the Town-planning and Housing Act the Ellesmere Port District Council, sitting in committee, have decided to limit the number of houses built hereafter to twenty-four to the acre. The present average in streets within the district is forty.

THE Home Secretary has appointed a committee to inquire and report as to the precautions necessary in the use of celluloid in the manufacture and the handling and storage of celluloid and celluloid articles. The names of the committee are:—The Earl of Plymouth (Chairman), Professor J. J. Dobbie (principal Government Chemist), Captain Maurice B. Lloyd, Mr. H. M. Robinson (Deputy Chief Inspector of Factories), and Mr. Edwin O. Sachs (Chairman of the Executive of the British Fire Prevention Committee).

BOTH for sentimental and practical reasons, the approaching sale of the materials which were once the G.P.O. Buildings at St. Martin's-le-Grand must be of unusual interest. For nearly a century Sir Robert Smirke's bold design has been the admiration of all who saw it. It appears that this fine façade would be disposed of by special arrangement, or, failing that, the lofty and handsome Ionic columns will be for disposal separately. For builders, contractors and buyers there will be vast quantities of building material in good condition for sale on the site, including granite blocks, Portland stone (about 100,000 feet super in good plain square blocks of all sizes), forty nearly new 27-feet steel girders, roof principals, three glass covered ways, a ten-ton weighbridge, wood beams about 500 squares of York landings, splendid old stock bricks and screened broken brick. This important sale is in the hands of B. Goodman, housebreaker and cartage contractor, 38 Haggerston Road, Kingsland Road, N.E.

THE Council of the Institution of Civil Engineers have made the following further awards for papers read during the session 1911-12:—A Watt gold medal to Professor W. H. Burr (New York), and the Crampton prize to Professor R. J. Durley (Montreal). They have also awarded the following Telford premiums for papers published in the proceedings without discussion during the same session:—To Messrs. Paul Seurot (New York), David Anderson and Harry Cunningham (London), S. P. Smith, D.Sc. (Birmingham), E. G. Rivers, I.S.O. (Richmond) and E. H. Morris (Manchester), and Professor A. H. Gibson, D.Sc. (Dundee). The Howard Quinquennial prize for 1912 has been awarded to Mr. J. H. Darby (Sheffield), in recognition of improvement introduced by him in iron and steel production, and the Indian premium for 1912 to Mr. H. H. G. Mitchell (Madras). The Council have made the following awards in respect of students' papers read during the session 1911-12:—The "James Forrest" medal and a Miller prize to Mr. E. P. Curral, B.Sc. (Birmingham), and Miller prizes to Messrs. J. H. Taylor (Glasgow), W. P. Warlow, B.Sc. (Bristol), G. Ingram (London), E. F. Hunt, B.E. (London), H. J. F. Gourley, B.E. (London), H. G. Hoskings (London), E. A. Cross, B.Sc. (Birmingham), and J. & W. Legg (London), and the "James Prescott Joule" medal to Mr. V. E. Green (Birmingham).

THE Liverpool Cathedral Committee held a meeting on Monday at the Church House. It was reported that the chancel, the vestries, chapter house, and the ambulatory of the cathedral could be finished within three years, and that the committee had all the furniture and fittings promised, with the exception of the Bishop's throne. The chancel will accommodate a congregation of 417 without the side aisles. The committee have sufficient funds in hand to enable them to complete this portion of the work, but after that there will be only about £14,000 available towards providing adequate accommodation for the congregation. The committee have, nevertheless, decided to proceed with the building of the first of the transepts at a cost of £79,000, and thus afford further accommodation for about 1,500 persons. This particular work will be completed in about three years, so that the transept will be consecrated at the same time as the chancel. The committee will thus have to raise a further £65,000 within the next three years.

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Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers.

All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

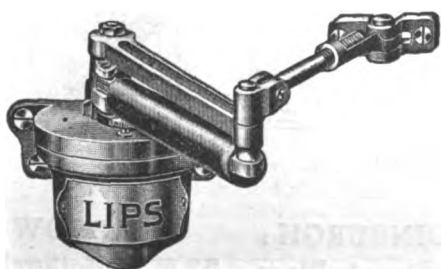
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie-Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the

(Continued on page 7.)

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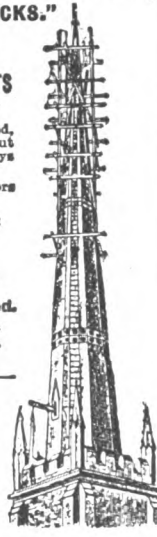
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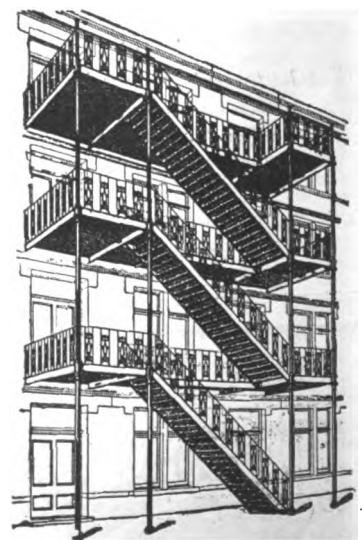
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second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ABERFORD.—For the various works required in the additions to Aberford National schools, near Leeds. Mr. A. P. Harrison, M.S.A., architect, High Close, Keighley.

BANBURY.—Oct. 21.—For erection of forty cottages at Paradise Road (Messrs. G. Lucas & A. Lodge, architects, 14 Hart Street, Bloomsbury Square, W.C.). Send applications and £2 2s. deposit by Oct. 21 to Mr. A. Stockton, town clerk, Town Hall, Banbury. (See advertisement.)

BARNSELY.—For the whole or separate trades for the extension of the public baths in York Street. Send applications and £2 2s. deposit to the Town Clerk, Barnsley.

BRADFORD.—Oct. 22.—For erection of branch post office at St. James's Market, for the Corporation. The City Architect, Town Hall, Bradford.

BRADFORD.—Oct. 23.—For extension of Bradford County Court, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Registrar at Bradford

County Court, and H.M. Office of Works, &c., Storey's Gate, S.W.

CARLTON.—Oct. 22.—For the various works required in pulling down of existing property and the erection and completion of four cottages in Station Road, for the Urban District Council. Deposit £1 1s. Mr. J. Cracroft Haller, C.E., engineer and surveyor to the Council, Station Road, Carlton, Notts.

CHELTHENHAM.—Oct. 23.—For sundry repairing works and the provision of baths at the workhouse. Mr. Thomas Malvern, architect, 21 Winchcomb Street, Cheltenham.

CHRISTCHURCH.—Oct. 21.—For erection of a laundry at the workhouse, Fairmile, Christchurch, Hants. Deposit £5. Mr. A. Drutt, clerk, Christchurch, Hants.

DEVON.—Oct. 24.—The County Education Committee invite revised tenders for the following work at Council Schools: Bridford—ventilation and new drainage, &c.; Broadhempston—alterations, ventilation, &c.; Combemartin (infants)—ventilation; Crediton—Landscare—new cloakroom, &c.; Drewsteignton—alterations, &c.; Holbeton—alterations, ventilation, &c.; Lydford—alterations, ventilation, new windows, playsheds, &c.; Stoke Gabriel—tar-paving; Stoke Rivers—enlargement, &c. Mr. Percy Morris, A.R.I.B.A., County Education architect, 1 Richmond Road, Exeter.

EVESHAM.—Nov. 3.—For erection of drill hall and instructor's house, with accompanying officers' rooms, armoury, and lecture rooms, &c., in Coronation Road, for the Worcestershire Territorial Association. Send applications and £1 1s. deposit by Oct. 25 to Messrs. Dicks & Waldron, architects, 1 Market Place, Evesham.

GREAT YARMOUTH.—Oct. 22.—For alterations to Great Yarmouth Post Office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster at Great Yarmouth Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

HALIFAX.—For the various trades required in erection of headquarters for the 2nd West Riding Bde., R.F.A., Arden Road. Mr. A. E. Kirk, A.R.I.B.A., architect, 63 Albion Street, Leeds.

HAMPTON COURT.—Oct. 24.—For extension of the women's cloakroom at Hampton Court Palace, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. G. J. T. Reavell, at H.M. Office of Works, Storey's Gate, S.W.

HANLEY.—Oct. 22.—For the erection of a relief station at the rear of 97 Moston Street. Deposit £1 1s. Mr. A. R. P. Piercy, architect, Union Offices, Stoke-on-Trent.

IRELAND.—Oct. 24.—For erection of a medical officer's residence and a dispensary at Caledon, for the Guardians of Dungannon Union. Mr. W. M'Guffin, clerk, Workhouse Board Room, Dungannon.

IRELAND.—Oct. 26.—For additions to Raffeen House, near Monkstown, co. Cork. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.

IRELAND.—Oct. 31.—The Pembroke Urban District Council invite tenders for the erection of a pier, promenade, sea and other baths, and pavilion, and repairs to existing pier, and all works incident to and connected therewith, at Merion, co. Dublin. Deposit £3 3s. Mr. J. C. Manly, clerk, Town Hall, Ballsbridge, Pembroke, co. Dublin.

IRELAND.—Nov. 1.—For erection of fifty artisans' and labourers' houses in two blocks of seven and two of eight each at Carrignafof, and in four blocks of five each at Ballyvoloon, with necessary walls and fences, laying out grounds, and all other prescribed work, for the Queenstown Urban District Council. Deposit £2. (Mr. J. A. M'Carthy, C.E., Timoleague.) Mr. J. H. Campbell, town clerk, Town Hall, Queenstown.

IRELAND.—Nov. 4.—For erection and furnishing of National school buildings at Coolnoohil, Kilgarvan, co. Kerry. The Office of Public Works, Dublin, and Kilgarvan Royal Irish Constabulary Barrack.

IRELAND.—Nov. 4.—The Secretary of State for War invites tenders for the alteration of and additions to the East Ward Block at King George V. Hospital, Dublin, in the Irish Command. Send applications and 10s. deposit by Oct. 25 to the Director of Barrack Construction, 80 Pall Mall, S.W., or Barrack Construction Office, King George V. Hospital, Dublin. (See advertisement.)

IRELAND.—Nov. 8.—For erection and furnishing of National school buildings at Knockroe, Boyle, county Roscommon. The Office of Public Works, Dublin, and Royal Irish Constabulary Barracks, Boyle.

KNOWLE.—Oct. 22.—For erection of three pairs of semi-detached cottages at the County Asylum, Knowle, near Fareham, Hants. Mr. N. Atkins, architect, 62 West Street, Fareham.

LEEK.—Oct. 28.—For erection of a Council School to accommodate 454 children, for the Staffordshire Education Committee. Send applications and £1 1s. deposit to Mr. Graham Balfour, director of education, County Education Offices, Stafford.

LONDON.—Oct. 23.—For the construction of iron and glass covered ways, glazed roofs over balconies, and screens at their infirmary, High Street, Homerton, N.E., for the Guardians of Hackney Union. Mr. F. R. Coles, clerk, Homerton, N.E.

LONDON.—Oct. 25.—For the erection of the North-Western district post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Rutherford, 22 Carlisle Place, London, S.W., and H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Oct. 25.—The Commissioners of H.M. Works and Public Buildings invite constructional schemes and tenders based thereon for the excavation for and the construction in reinforced concrete of the foundations, retaining walls, columns, floors, roof, stairs, &c., for the new spirit museum at the Natural History Museum, South Kensington. Any system or systems of construction may be adopted for the whole or part of the work, and full details must be furnished immediately for examination, if necessary. Deposit £2 2s. H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Oct. 29.—For alterations and extension of the convenience in Billingsgate Market, for the Corporation. Deposit £2 2s. The Engineer, Public Health Department, Guildhall, E.C.

LOUGHBOROUGH.—For construction and erection of a refuse destructor house over the existing destructors at the sewage farm, including all contingent works. Deposit £2 2s. Mr. A. H. Walker, A.M.I.C.E., borough surveyor, Town Hall, Loughborough, Leics.

LYMINGTON.—Oct. 30.—For alterations to the cells, the provision of a prisoner's w.c. and lavatory, together with other work, at Lymington police station, Hants. Deposit £2 2s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

MANCHESTER.—Oct. 23.—For the construction of a halt at Woodlands Road, for the Lancashire and Yorkshire Railway Co. The Engineer's Office, Hunt's Bank, Manchester.

MORLEY.—Oct. 26.—For the bricklayers', joiners', plumbers', plasterers', and slaters' work required in extensions to Perseverance Mills, for Messrs. A. Marshall & Son. Mr. T. A. Buttery, Lic.R.I.B.A., architect, Queen Street, Morley, and 1 Basinghall Square, Leeds.

NEWBRIDGE (MON.).—Nov. 1.—For the erection of ten pairs of semi-detached houses (more or less), for the Bryn Building Club. Messrs. Jenkins, James & Co., architects, Newbridge and Crumlin, Mon.

NORWICH.—Oct. 21.—For erection of Wensum View boys' Council School. Deposit £1 1s. Mr. C. J. Brown, architect and surveyor, Cathedral Offices, The Close, Norwich.

OSSETT.—Oct. 23.—For the whole or any of the works required in extension of mill premises at Ossett, Yorks. Messrs. Holtom & Fox, architects, Corporation Street, Dewsbury.

PONTLLANFRAITH.—Oct. 28.—For erection of Council offices, caretaker's house, and outbuildings at Pontllanfraith, Mon., for the Mynyddislwyn Urban District Council. Mr. W. A. Griffiths, architect, Post Office Chambers, Pontllanfraith, Mon.

SALTBURN.—Oct. 29.—For the whole of the work required in alterations and additions to Saltburn elementary Council School, for the North Riding of Yorkshire County Education Committee. Mr. J. C. Wrigley, secretary, Education Offices, Northallerton.

SCOTLAND.—For works in erection of a picture palace to be erected in Whytecauseway, Kirkcaldy—viz.: Mason, brick, concrete, carpenter and joiner, slater, plumber, asphalt, plaster, iron and steel, glazing, heating, electric lighting, furnishings. Deposit £1 1s. Mr. J. D. Swanton, architect, Redburn Chambers, Kirkcaldy.

SCOTLAND.—Oct. 23.—For mason, carpenter, slater, plaster, plumber, glazier and painter, steel, furnishings, and window-blind works of proposed additions to the North School, Fraserburgh, for the School Board. Mr. Alex. Henderson, clerk to the Fraserburgh School Board, Fraserburgh, and Messrs. D. & J. R. McMillan, architects, 105 Crown Street, Aberdeen.

SCOTLAND.—Oct. 28.—For the various works in proposed children's home, Crewe Road, Edinburgh, for the Edinburgh

Parish Council—viz.: Mason and bricklayer, iron, joiner, plumber, plasterer, slater, heating, and painter. Mr. R. M. Cameron, architect, 53 Great King Street, Edinburgh.

STOKE-UPON-TRENT.—Oct. 22.—For erection of a relief station, &c., in Werrington Road, Burknall. Mr. A. R. P. Piercy, architect, Union Offices, Stoke-upon-Trent.

SUNDERLAND.—Oct. 30.—For erection of additions to the workhouse infirmary, Hylton Road. Deposit £2 2s. Messrs. W. & T. R. Milburn, FF.R.I.B.A., architects, 19 Fawcett Street, Sunderland.

TRINDON.—Oct. 22.—For erection of a church hall and institute at Deaf Hill (Trindon Station). Send applications by Oct. 22 to Messrs. Clark & Moscrop, FF.R.I.B.A., architects, Feethams, Darlington.

WALES.—For erection of new police station at Ystradgynlais, for the Brecon Standing Joint Committee. Send names to Mr. C. W. Best, M.I.C.E., county surveyor for Breconshire, Brecon.

WALES.—Oct. 24.—For carrying out extensive alterations and additions to the training school, Aberdare, in order to convert same into a subsidiary workhouse, for the Guardians of Merthyr Tydfil Union. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WALES.—Oct. 26.—For alterations and additions to Constitutional Club, Bartlett Street, Caerphilly. Mr. J. H. Phillips, F.R.I.B.A., 7 Pembroke Terrace, Cardiff.

WALES.—Oct. 29.—For the erection of a goods shed at Pontardulais Station, Glam., for the London and North-Western and Great Western Joint Railway. The Engineer, Great Western Railway, Paddington Station, London, W.

WANSTEAD.—Nov. 7.—For erection of a fire brigade station in Wanstead Place, at the corner of Fitzgerald Road. Deposit £1. Mr. C. H. Brassey, F.S.I. surveyor, Council Offices, Wanstead, N.E.

WARWICK.—Oct. 25.—For the following works, for the Guardians: (1) Supplying heating and hot-water apparatus and fittings at the infirmary, Warwick; (2) erection of chimneys in connection therewith. Mr. C. H. Passman, clerk, 48 Bedford Street, Leamington Spa.

WEYMOUTH.—Oct. 24.—For erection of certain premises in the borough for use as a disinfecting station, for the Town Council. The Borough Surveyor, Weymouth.

WHITCHURCH.—Oct. 28.—For erection of a Council School at Whitchurch (near Bristol), for the Somerset County Council (Education Committee). Mr. A. J. Pictor, A.R.I.B.A., architect, Bruton, and the Whitchurch C.E. School.

WINSLEY.—Oct. 23.—For alterations and additions to the Winsley Sanatorium. (Mr. W. S. Skinner, architect, 27 Orchard Street, College Green, Bristol.) Send £2 2s. deposit to Mr. F. Jones, secretary, Winsley Sanatorium, near Bath.

TENDERS.

BEDWAS.

For erection of twenty-six or more houses, for the Grove Building Club. Mr. GOMER L. REES, architect and surveyor. Bedwas (Mon.) and Aberfan.

Brooks & Sons	£235	0	0
Williams Bros.	235	0	0
Lewis & Sons	230	0	0
Warlow & Warlow	224	0	0
Smith	212	0	0
D. Thomas & Sons	212	0	0
A. Thomas	207	10	0
F. BRISTOW (accepted)	203	5	6
Jenkins & Seaton	194	5	0

BLACKBURN.

For erection of public halls on Blakey Moat (substructure portion). Messrs. BRIGGS, WOLSTENHOLME & THORNLEY and Messrs. STONES, STONES & ATKINSON, joint architects, Blackburn.

Livesey & Sons	£17,000	0	0
Fecitt & Sons	16,410	0	0
Wilson & Sons	16,300	0	0
Partington	16,250	0	0
Higson & Sons	16,210	0	0
Whittaker & Sons	16,150	0	0
Lewis & Sons	16,100	0	0
CRONSHAW & SONS, Blackburn (accepted)	16,000	0	0

GRAYS.

For the erection of additions and alterations at Arthur Street Council School, for the Essex Education Committee. Mr. CHRISTOPHER M. SHINER, A.R.I.B.A., architect and surveyor, 7 Adam Street, Adelphi, W.C., and Grays, Essex.

Foster & Sons	£2,757	0	0
Moss	2,518	0	0
Davey	2,385	0	0
Potter	2,375	0	0
Chessum & Sons	2,359	0	0
Brown	2,290	0	0
Dowsing & Davies	2,280	0	0
Brown Bros.	2,272	0	0
H. J. Carter, Ltd.	2,175	0	0

KENILWORTH.

For erection of lodge, chapel, &c., in connection with proposed cemetery. Mr. S. DOUGLAS, C.E., architect, Kenilworth. Quantities by the architect.

Nixon & Sons	£1,727	0	0
Langley	1,445	8	0
Collins & Godfrey	1,393	0	0
G. F. Smith & Son	1,390	0	0
Wincott	1,390	0	0
Tilt Bros.	1,385	0	0
Howells	1,320	0	0
Colbourne	1,299	0	0
Lee & Son	1,295	10	0
Executors of R. Bowen	1,282	0	0
E. SMITH & SON, Kenilworth (accepted)	1,280	0	0
Surveyor's estimate	1,233	3	4

LONDON.

For repairs to be done to the vacant houses, &c., of the Licensed Victuallers' Asylum, Old Kent Road, Camberwell. Mr. W. F. POTTER, architect, Hatcham, S.E.

Sayer	£78	15	6
W. CLARK & Co. (accepted)	52	8	0
Garner & Co.	44	18	6

For erection of the central library, for the Deptford Borough Council. Tenders selected for consideration:—

Bath Stone and Deal Joinery.

Coles	£10,586	6	2
Holloway	10,482	0	0
Gorham	10,339	12	4

Extra for Portland Stone and Hardwood Joinery.

Holloway	1,528	0	0
Coles	1,424	17	11
Gorham	869	16	1

Sundry Items.

Gorham	408	10	0
Holloway	408	0	0
Coles	384	19	4

MARKET HARBOUROUGH.

For erection of a handicraft centre, for the Leicestershire Education Committee.

Garfield, Tilley & Johnson	£469	0	0
Haycock Bros.	460	8	9
Sleath	456	0	0
Kellett & Son	436	0	0
Fox	401	9	0
JARMAN & SONS, Market Harborough (accepted)	427	0	0

SOUTHAMPTON.

For reconstruction of tramways in Above Bar Street, from the Clock Tower to Hanover Buildings, for the Town Council.

Kirk & Randall	£2,543	0	0
Trentham	2,522	0	0
Pearce	2,419	2	3
Douglas	2,373	0	0
GRIFFITHS & Co., LTD., London (accepted)	2,210	9	2
Osman & Co.	2,078	0	0

TWYFORD.

For erection of six cottages, for the Buckingham Rural District Council. Mr. L. BELL, surveyor, Buckingham.

Thomas	£1,139	0	0
Stevens	1,075	0	0
Cox	1,038	0	0
Walker	960	0	0
Crook & Judd	926	9	7
W. H. RICKETTS, Thame (accepted)	795	0	0

THE REGISTRATION OF PLUMBERS.

THE General Council for the National Registration of Plumbers met last week at the Council House, Bristol, the High Sheriff (Mr. R. E. Bush) presiding in the absence of the Lord Mayor. Representatives of public authorities and plumbers were present from all parts of the kingdom.

The High Sheriff said: "Everybody must agree that efficient plumbing work is a matter of vital importance from a health point of view, and the National Registration of Plumbers deserves all the aid and encouragement which can be given to it, not only by the authorities, but by everyone who has any regard for his own health and for the health of his neighbours."

The Council adopted the recommendation of a committee that, "In order that the public may have greater security for the efficiency of the sanitary appliances and water service in their houses, the work connected with such appliances and services may be so marked by registered plumbers that the names of the master plumbers or other employers, and also of the operative plumbers employed to execute the work, may be identified and recorded, and a check may thus be placed on the employment of unqualified or irresponsible persons to execute plumbers' work."

At the conclusion of the conference the Chairman (Mr. H. D. Searles-Wood, F.R.I.B.A.) made a statement with regard to the position of the building trade and the National Insurance Act, in which he said that one of the most important functions of the Act was the improvement of the public health. *Inter alia*, the Act empowered the insurance officers to arrange for the testing of the skill and knowledge of any insured workman whose repeated failure to obtain or retain employment appeared to be due to defects in those respects, and in suitable cases to pay out of the employment funds all or any of the expenses incidental to the provision of his instruction. If that was construed, as it was anticipated to be construed, in its relation to the public health, the test and instruction of the plumber would call for the consideration of the General Council of the National Registration of Plumbers.

A notable confirmatory view was expressed in Scotland on Monday, when Sir James Crichton-Browne, in presenting prizes to the successful students in the plumbers' classes at Dumfries, said: "It is the laudable aim of the Plumbers' Company at the present day, as in the past, to prevent bad and defective plumbing, and in their enterprise we must all heartily wish them God-speed. An Englishman's or a Scotchman's house isn't his castle if it is riddled with secret passages through which the legions of disease may pour in upon him. Innumerable lives have been lost by bad plumbing and draining work. Let us put a final stop to that, and insist that all new men who have been qualified by long experience shall have diplomas of fitness. The man who holds a diploma becomes something more than an artisan. He is really an artist, takes a pride in his calling, and tries to place it on a higher footing."

GLASGOW BUILDING TRADE.

At a recent sitting of Glasgow Dean of Guild Court Mr. Francis Henderson, the retiring Dean of Guild, made the customary annual statement. The general trade of the country had, he said, recently been experiencing better times. But the wave of prosperity had not yet reached those trades with the work of which a Dean of Guild Court was more intimately concerned. The building trades of Glasgow were still far from the enviable position which they occupied some years ago. That might be due to many things. It might be that in those years there was to some extent over-building. But if ordinary conditions had prevailed they would have heard less of this cry of over-building. Ordinary conditions had not prevailed. He found from the report on the census of 1911 by the City Medical Officer of Health that whereas the natural increase of population—that was, the excess of births over deaths—for the decade ending in 1911 was 91,202, the actual increase was only 8,902. In other words, instead of a percentage of 11.8, the actual increase showed only a percentage of 1.1. The loss to the city by emigration and by overflow into suburban areas was rather apt to be forgotten by unsympathetic critics of builders. Be that as it may, however, the building trades during the past year had had nothing to boast of, which, no doubt, was to some extent owing to the fact that there were still within the old city boundaries 18,620 unoccupied houses and 4,620 unoccupied shops, &c. The returns for houses generally, for warehouses, shops and offices, for churches and halls, for

schools and for public buildings, all showed marked decreases in value. There had been a very great and, to his mind, satisfactory decrease in the number of houses consisting of one apartment. The returns for houses of three and four apartments and for single shops and workshops, &c., showed slight increases. But the past year was seen at its best in the returns for alterations and additions. Though the number of cases for these was much the same as in the previous year, the valuation of the work involved had risen from £105,885 to £169,213.

The statistics for the year he was dealing with were as follows:—For warehouses, shops and offices, there were forty linings, six being for new work and thirty-four for additions and alterations. The valuation of the new work was £84,631 and the valuation of the additions and alterations £27,007. For workshops, manufactories, stores, stables, sheds, &c., there were 140 linings, seventy-one being for new work and sixty-nine for additions and alterations. The valuation of the new work was £112,308 and the valuation of the additions and alterations was £59,704. For churches and halls there were six linings, equally divided between new work and alterations and additions. The valuation of the new work was £8,764, and the valuation of the additions and alterations was £220. For schools there were ten linings, three being for new work and seven for additions and alterations. The valuation of the new work was £22,985, and the valuation of the additions and alterations was £6,461. For public buildings there were forty-two linings, eighteen being for new work and twenty-four for additions and alterations. The valuation of the new work was £127,602, and the valuation of the additions and alterations was £65,826. For new streets there were only three linings, the length authorised being only 249 lineal yards—the lowest record during the past twenty-eight years. For houses and shops there were seventy-eight linings, fourteen being for new work and sixty-four for additions and alterations. The valuation of the new work was £51,139, and the valuation of the additions and alterations was £9,875. Of the eight districts into which the city was divided, Queen's Park again took the lead with twenty-seven linings, Maryhill coming second with seventeen, and the Central coming last with none. During the year six houses of one apartment, 120 of two apartments, fifty-three of three apartments, thirteen of four apartments, six of five apartments, and two with six or more apartments were authorised. Single shops to the number of twenty-five and double shops to the number of six were also authorised. The total valuation of new houses and shops amounted only to £51,139. In respect of houses and shops they had reached the lowest point in the forty years for which they had statistics.

He noticed in the report he had already referred to that the average house in Glasgow contained 2.550 rooms, that the average number of occupants in each house was 4.658, and the average number of persons per room was 1.827. The average number of rooms per house had come down a little from the corresponding figure of ten years ago. But in judging of sanitary conditions the density per room was the better guide. The figures given as to the average number of persons per room was still higher than what one would like to see, but in comparison with the figures of twenty and thirty years ago they showed a very marked improvement. Apart from that, sanitary and other conveniences had made great strides. The percentage of unlet rental was on the increase. In 1902 it was only 2.29 of the total rental. In 1907 it had risen to 5.35, and this year it had reached the high figure of 6.34. Over and above the cases spoken of, the Court had last year disposed of fifty-four cases at the instance of the Procurator-Fiscal or the Master of Works. In these cases 373 proprietors were concerned. The cases which dealt with the repair of roads and pavements involved an expenditure of £6,150, and those dealing with sewers an expenditure of £685. Together these sums amounted to £6,835, as against £4,902 in the previous year. In three cases fines were imposed for Guild offences.

The visitations by the Court during the year had been in connection not only with controversies between neighbours, but to a great extent with the exercise of statutory powers and particularly with what were known as hollow squares. These statutory powers were no doubt complicated and vested in the Court a large discretion, but in the discussion of this matter the special constitution of the Court seemed not to be always known or kept in view. It would be difficult to imagine any body better fitted to exercise a wise discretion or to hold the balance equally between the municipality on the one hand and the citizens on the other than a Court constituted as that one was. In his opinion, says the

Glasgow Herald, it was as nearly as it was possible for human ingenuity to devise a perfect instrument for the carrying out of the purposes for which it was originally established, and where the interests and welfare of the inhabitants of Glasgow were concerned no Court in the United Kingdom had a clearer vision. He referred a year ago to some alterations and improvements in the procedure of the Court which had been instituted for the facilitating of their business. Further steps in the same direction had been taken this year, and the regulations of the Court were now so systematised that there should be very little possibility of difficulty or misunderstanding arising in future.

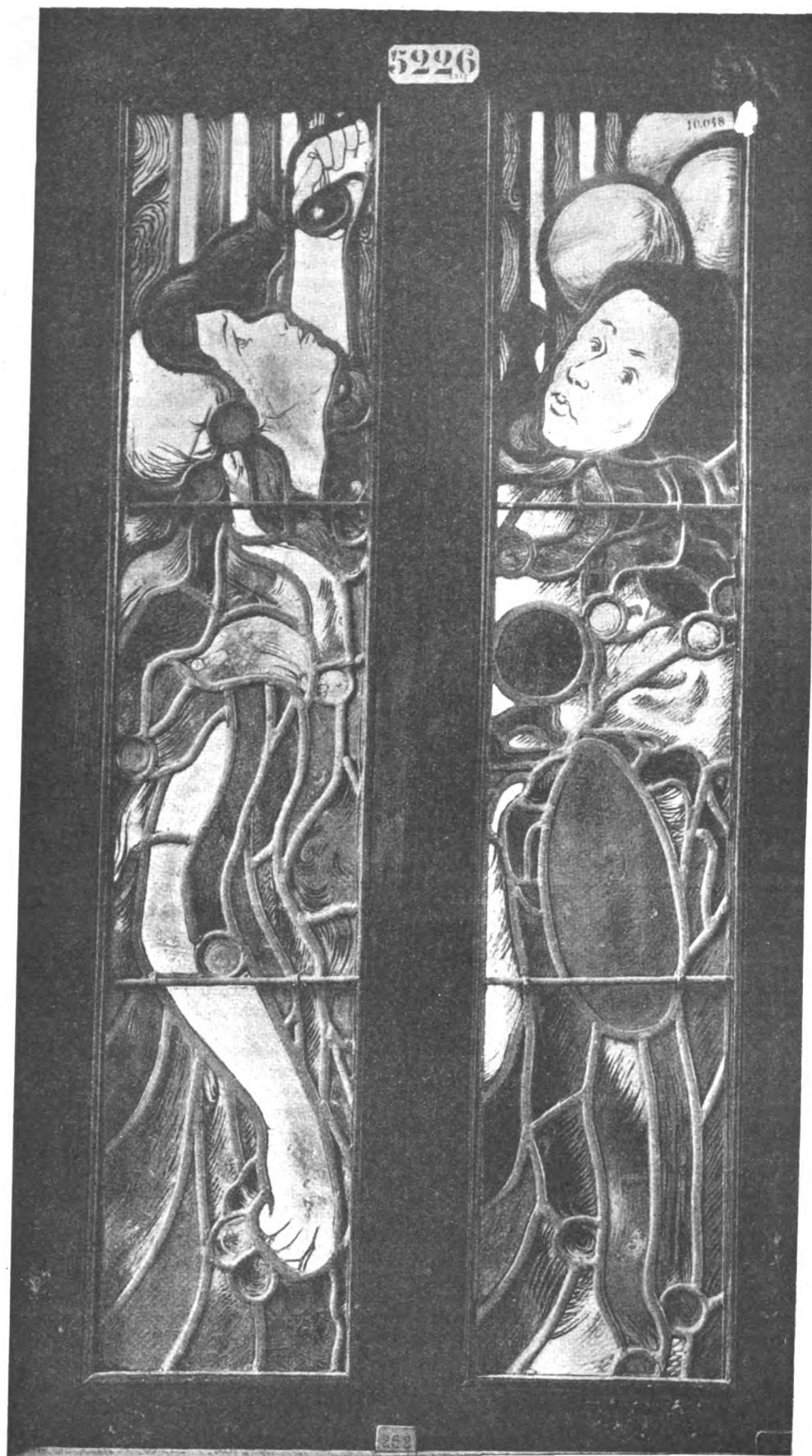
REBUILDING OF HANKOW.

In his trade report for the year 1911, an abstract of which appears in the *Board of Trade Journal*, the Commissioner of Maritime Customs at Hankow states that, as a result of the revolution in China, the once rich and prosperous native city of Hankow is a heap of charred ruins—an area of two square miles, formerly occupied by a network of streets full of fine shops and teeming go-downs, having been utterly destroyed. To attempt to assess the damage would be futile—100 million taels or 500 million taels might equally be near the mark. The blotting out of the city has been the cause of untold misery to thousands of its former inhabitants; but the cloud is not without some silver lining. The city consisted of a congested mass of buildings of all sizes, with the usual narrow lanes and insanitary conditions, and only its destruction would ever have made possible the city on modern lines, which is absolutely required for the proper development of the port. Much raising of the land behind will be necessary before the new city can be built, but plans are being drawn up to utilise the old site with a view to future extension. With local desolation and general disturbance, it is hard to prophesy when Hankow will recover. An old experienced Chinese merchant holds that not less than thirty years will be required; the writer, with eight years' experience of its growth under great difficulties, expects that the third year of a settled government will see its trade greater than ever. Immense sums will have to be spent on the new city, but it is only reasonable to suppose that China as a whole will come to the aid of the place which has been destroyed in establishing the Republic. The local leaders have shown wisdom throughout, and may be expected to re-build the city properly. The old site is too small: the new city should be planned with a view to using the triangle between the railway and the rivers entirely for business purposes, and driving both the residential and poor quarters to the other side of the railway.

An excellent thing for Wuhan would be an electric tube under the river, the power plant also lighting Wuchang and driving trackless cars; it appears to offer few difficulties, and a double line would cost under £1,000,000, perhaps only £700,000. It would provide the needed means of communication both for the present and when the Canton Railway reaches Wuhan, and would relieve the congestion at Hankow by the waste hills and lands on the Wuchang bank of the river being taken into residential occupation, the enhanced price for which the Government could sell such land going far to pay the cost of laying the line. Such a tube would be far more effective than the constantly mooted bridge, which a competent foreign engineer has estimated to cost £6,000,000, apart from cost of land approaches, and which would cost a large sum for upkeep.

MR. THOMAS ARNOLD, architect, F.R.I.B.A., of 22 Brougham Street, Edinburgh, who died on July 12 last, left personal estate in the United Kingdom valued at £4,356, of which £2,015 is in Scotland.

MESSRS. MACMILLAN & Co. will publish shortly "Byzantine Churches in Constantinople, their History and Architecture," by Dr. Alexander Van Millingen, Professor of History, Robert College, Constantinople; with the assistance of Mr. Ramsay Traquair, A.R.I.B.A.; Mr. W. S. George, F.S.A.; and Mr. A. E. Henderson, F.S.A. The book constitutes a fresh study, undertaken with the object of confirming what is true, correcting mistakes, and gathering additional information. *Sta Sophia* is not dealt with, partly because there were many obstacles in the way of a proper treatment of it, and partly because earlier writers had made the attempt seem superfluous. The book has 92 page plates and 132 plans and illustrations in the text.



STAINED-GLASS DOOR PANELS, DESIGNED BY CLAIRE GAUDET, AND EXECUTED BY MESSRS. E. & C. O'NEILL
Exhibited at the St. Louis and New Zealand Exhibitions and the Old Salon, Paris, 1912.

THE Brixham Urban District Council have adopted a scheme of further extending the breakwater at a cost of over £40,000. The plans have been prepared by Sir John Wolfe Barry & Partners, Westminster. Messrs. W. Hill & Co., of Victoria Street, Westminster, who carried out the recently completed extension, have been awarded the contract without competition.

MR. FRANK MATCHAM is preparing a scheme of extensive alterations to be carried out to the hotel on Tagg's Island, near Hampton Court.

MR. E. S. PRIOR, M.A., F.R.I.B.A., Slade Professor of Fine Art, has been elected into an Honorary Fellowship at Gonville and Caius College, Cambridge, of which college he was formerly scholar.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

BUCKINGHAMSHIRE.

Terriers.—Church Room.

CHESHIRE.

Bredbury.—Two houses, Mill Lane, for Messrs. E. & H. Bridge.

Warehouse extension, Chadkirk, for Messrs. Sydal Brothers.

Works extension, Britannia Works, Redhouse Lane, for Messrs. Pollock & Macnab.

CUMBERLAND.

Newtown.—Junior Council School (£6,000).

Penrith.—Council School.

Talkin.—"Blacksmiths' Arms" Inn: additions and alterations. Mr. J. Leslie (of Carlisle), architect.

DERBYSHIRE.

Matlock.—U.M. Church Schools (£500).

DEVON.

South Molton.—Artisans' dwellings (£1,800).

DORSET.

Winterborne Abbas.—Pair of cottages on the "Poor Lot" site.

DURHAM.

Boldon.—Twelve (or more) homes for aged miners, Hedworth Road. Mr. J. H. Morton, F.R.I.B.A. (of South Shields), architect.

Chopwell.—Workmen's dwellings (£5,300).

Hartlepool.—Drill Hall and Headquarters for the Boys' Brigade (£3,000).

South Shields.—Thirty (or more) homes for aged miners. Mr. J. H. Morton, architect. (See above, "Boldon.")

Usworth.—Fifty-seven working-men's houses (£12,800).

GLOUCESTERSHIRE.

Bristol.—Council School for 500 places, Baptist Mills.

HAMPSHIRE.

Bournemouth.—Savoy Hotel additions, West Cliff, for Mr. W. L. Taylor.

"Merivale Hall," Meyrick Road: additions for the Imperial and Grand Hotels Co., Ltd.

No. 19 Ashley Road: additions for Mr. D. L. Ballard. House and stables, Branksome Hill Road, for Mr. A. Frewin.

House, Castlemain and Paisley Roads corner, for Mr. H. C. Coates.

"Tenanova," Milner Road: additions for Mr. C. S. McKay.

"Castle" Laundry, Castle Road: additions for Mr. R. Bevington.

Lock-up shop, No. 30 Commercial Road, for Messrs. Usher's Brewery Co.

Southampton.—St. Mary's Church tower (£4,500).

KENT.

Ashford.—Kiln, Dover Place, for Messrs. Eastes & Loud.

Gillingham.—Bungalow, Bredhurst Road, Wigmore, for Mr. E. M. Morris.

Bungalow, Hempstead, for Mr. E. French.

House, Eva and Ivy Roads corner, for Mr. Fairbrass.

House, Gillingham Road, for Mr. Carrington.

House, Napier Road. Mr. E. J. Hammond, architect.

House, Wigmore Road, for Mr. E. Towers.

Gravesend.—House, Parrock Road. Messrs. Bridgland & Clay, A.R.I.B.A., architects.

Sevenoaks.—House, Solefields.

Building additions for the Anglo-American Oil Co., Goods Station Yard, Tubs Hill.

Tunbridge Wells.—Ice factory, Vale Road, for the Tunbridge Wells Ice and Cold Storage Co., Ltd.

Church Army premises, Upper Grosvenor Road: additions.

St. Mark's Church Hall, Bayham Road.

Two houses, Culverden Down, for Mr. A. E. Avon.

"Bellevue," Forest Road: additions for Mr. A. Badcock.

House, Forest Road, for Mr. F. Bell.

Sixteen houses, Lime Hill Road, for the Tunbridge Wells Ice and Cold Storage Co., Ltd.

"Yewbank": additions for General Suart.

House, Oakdale Road, for Mr. E. Winchester.

Five houses, St. John's Road, for Mr. L. Ide.

Five pairs of houses, Whitefield Road, for Mr. A. E. Avon.

Avon.

LANCASHIRE.

Blackburn.—St. Michael's Parish Hall.

Bolton.—Bungalow, Lower Heys, Doffcocker, for Mr. Hampson.

Mill extension, Gilnow Lane, for Messrs. Salmon & Taylor.

Halliwell Mills extension, off Weymouth Street, for Messrs. Greenhalgh & Shaw, Ltd.

Works additions, Markland Hill, for the Ferrorock Stone Co., Ltd.

Works additions, Gibraltar Street, for Messrs. J. Deorden & Co.

Liverpool.—Cathedral transept (£79,000). Mr. G. G. Scott, F.R.I.B.A. (of London), architect.

Ulverston.—Coronation Memorial Hall (£3,000).

LINCOLNSHIRE.

Lincoln.—St. Peter-in-Eastgate: church improvements (£1,800).

House, Church Lane, for Mr. P. W. Robson.

Thirteen houses, Burton Road, for Mr. J. H. Harrison.

House, Monks' Road, for Mr. R. L. Holland.

Fifteen houses, Dorset Street, for Messrs. Oldfield & Hayes.

Four houses, Scorer Street, for Lincoln Land and Building Society.

House and shop, No. 260 High Street: alterations for Mr. J. Buttery.

Two houses and stabling, Olive Street, for Mr. W. F. Berry.

MIDDLESEX.

Hampton.—Cottage Hospital, Upper Sunbury Road. Mr. F. G. Hughes, architect.

NORFOLK.

Great Yarmouth.—Additions to premises, Riverside, Gorleston, for the Royal National Mission to Deep Sea Fishermen.

NORTHAMPTONSHIRE.

Corby.—Council School (£4,750).

Crick.—Council School.

Irthlingborough.—Baptist Schools, Meeting Lane.

Kettering.—Factory additions, Carrington Street, for Messrs. Mobbs & Lewis, Ltd.

Workhouse, London Road: Men's day room.

Towcester.—Council School (£3,000).

SOMERSET.

East Compton.—Public Elementary School.

STAFFORDSHIRE.

Audley.—Bradwell Joint Hospital (£5,000).

Hanley.—Baptist Church (500 sittings) and Schools (400 places), Old Hall Street.

Bushbury Lane, Fazeley, and Halmer End.—Council Schools.

Newcastle.—Seven cottages, Stanier Street. Borough surveyor.

Cinema Theatre, High Street: completion for Messrs. Coop & Co.

Rushall.—Infants' school (for 228 places) and drill hall.

Stafford.—Parish vestry and diocesan library, St. Mary's Churchyard.

Stoke.—Northcote Memorial Catholic Day School for boys (£4,000).

SURREY.

Dorking.—St. Martin's Church: Chancel aisle. Mr. B. Champneys, F.R.I.B.A., architect. Messrs. Bunning & Fitton Adams (of Godalming), contractors (£1,215).

Epsom.—Police Court (£3,500).

Woking.—Working-men's cottages.

WORCESTERSHIRE.

Dudley.—Mission Church.

YORKSHIRE.

Alne.—Wesleyan Church: Schoolroom, Vestry, &c. Mr. J. F. Todd (of Easingwold), architect.

Bridlington.—Workmen's dwellings for twenty-five families.

Pickering.—Conservative Club: alterations.

Sheffield.—Coroner's Court and Mortuary, in Nursery Street, Wicker and Nursery Lanes (£5,000).

WALES.

Garnant.—Council School (£6,800).

Llanelly.—Public Hall.

Fifty municipal houses.

Neath.—Joint hospital for thirty beds (£11,400).

Swansea.—St. Jude's Church: extension.

St. Joseph's R.C. School: alterations. Mr. G. E. T. Laurence, A.R.I.B.A. (of London), architect.

SCOTLAND.

Ayr.—Y.M.C.A. rooms, High Street (£5,000).
Chryston.—Four tradesmen's houses, Epileptic Colony, East Muckroft. Glasgow Parish Council.
Dunbar.—Cavalry barracks, Castle Park.
Edinburgh.—Y.M.C.A. buildings (£50,000).
Greenock.—Governor House, Battery Park, for the Corporation Gas Department.
Tenement, Belleville Street, for Messrs. R. Aitkenhead & Sons.
Board School.
Lowvalleyfield.—Ten workmen's dwelling-houses.
Millerston.—Double cottage, Mossbank Industrial School, for Glasgow Juvenile Delinquency Board.
Perth.—Postal Sorting Office, St. Andrew Street.
Portobello.—Town Hall. Mr. J. A. Williamson, A.R.I.B.A. (City Superintendent), architect. Accommodation for 1,000 sittings (£6,000).
Wick.—Lifeboat house (£1,100).

IRELAND.

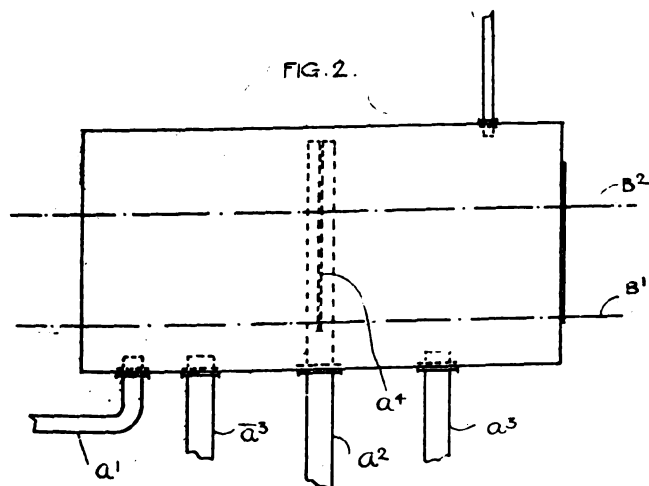
Killiney.—Working-class houses (£1,800).

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 5,818. March 8, 1912.—Distributing tank for use in systems of heating by liquid circulation. A. R. Poole, 9 Langholm Crescent, Darlington. This invention has reference to an improved system of circulating heated water, the object being to enable pipes and radiators to be warmed or heated when installed below the level of the boiler, without the assistance of steam, pumps, injectors, or other mechanical power, thus enabling the boiler to be placed at any level. Fig. 2 is an elevation of distributing tank showing the various pipes for supplying and distributing or circulating the water. The distributing tank is fitted with the usual supply pipe a^1 for cold water, which is connected to the usual cold water storage tank (not shown), the latter



being fitted with automatic controlling valve and overflow. A back pressure valve may be fitted in cold water supply pipe, a^1 , to prevent the return flow of water from the tank to the cold water storage tank. The distributing tank is sealed or entirely covered, and passing to this tank direct from the boiler is a pipe, a^2 , for conveying the hot water. The pipe, a^2 , which extends up into the tank above the water level, has a continuous opening or openings, extending from just below water level, B^1 , before water is heated to and above a point equal to water level, B^2 , when water is heated and expanded. The end of pipe a^2 above water line B^2 is left open. The hot water is conveyed from tank through the outlets a^3 , of which there may be one or more. The tank is fitted with the usual vent pipe, also manhole for inspection. A gauge glass may be fitted to the tank to show level of water. When the water in the boiler is heated it flows up pipe a^2 into the tank through openings in pipe a^2 . When circulation starts, the water passes through the restricted portion of opening or openings in pipe a^2 , at and slightly below water level B^1 , and as the whole of the water in the apparatus becomes heated and circulated it expands and

risers to water level B^2 in the tank, and discharges through the opening or openings in pipe a^2 of increasing area. The water in the tank circulates through the outlets a^3 throughout the system and finally back to the boiler, and so on continually. By this means it will be seen that a constant circulation is maintained between the distributing tank and the boiler as it passes throughout the entire system, thus enabling pipes, radiators or the like to be warmed either when situated above or below the boiler. August 21, 1912.

PATENT SPECIFICATIONS PUBLISHED
OCTOBER 10, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 24,764. Nov. 7, 1911.—E. W. Brown, 17 High Street, Colne, Wiltshire, and C. J. Watts, Westbury, Banister Road, Southampton. Combined screen and stove or radiator.

27,232. Dec. 5, 1911.—Daniel Murphy, 52 Ashburnham Road, Greenwich, S.E. Bolts for doors, gates and the like.

27,754. Dec. 11, 1911.—John Shanks, Tubal Works, Barrhead, Renfrewshire. Supply connections for cisterns of an installation of water closets and the like.

27,858. Dec. 12, 1911.—G. Andina, Trofarello, and J. W. Bottomley, Whitehouse Engineering Works, Leeds. Kilns for burning or firing bricks, tiles or other earthenware, fireclay or like goods.

28,040. Dec. 13, 1911.—William C. Stephens, Climax Drill Works, Carn Brae, Cornwall. Unions for couplings for cocks.

909. Jan. 11, 1912.—Joseph Schwend, 13 Moller Strasse, Strassburg i E. Chimney pots.

1,358. Jan. 17, 1912.—A. G. Watkins and C. A. Llemm, Harrisburg, Dauphine, Penn., U.S. Methods of reinforcing wood.

1,711. Jan. 22, 1912.—Ellen Chandler and Emily Corin, 2A The Boulevard, High Road, Balham, S.W. Sinks.

2,251. Dec. 8, 1911.—T. Boyd, 289 Featherstall Road, North, Oldham. Attachments for glazing bars.

2,786. Feb. 3, 1912.—Richard Ames, 145 Ditchling Road, Brighton. Pipe joint.

8,832. Feb. 3, 1912.—Richard Ames, 145 Ditchling Road, Brighton. Flexible joint for spigot and socket pipes.

4,318. Feb. 21, 1912.—E. M. Knight, 11 Southampton Buildings, W.C. Filters.

5,507. March 5, 1912.—Hall & Kay, Ltd., D. Hall, and J. H. Kay, Stockport Road, Ashton-under-Lyne. Means for uniting the ends of sheet metal tubes.

10,709. May 6, 1912.—John Carlson, 1295 Gay Street, Portland, Oregon, U.S. Mortising machine.

10,788. May 7, 1912.—L. Mitchell, Town Hall, Bolton, and G. T. Hamer, 69 Morningson Road, Bolton. Pipe couplings.

13,479. June 8, 1912.—John Caldwell, 48 East Eighty-Ninth Street, New York. Door locks.

20,652. Sept. 18, 1911.—Martin Hatz, Bauspengerei-u-Installations-geschäft, Chur, Switzerland. Metal roofing sheets.

20,731. Sept. 19, 1911.—Florenca Escalada, the Waldorf Hotel, Aldwych, London. House for tropical climates.

20,749. Sept. 19, 1911.—Ogleslav Kosstovitch, Malaya Rybatzkava, Sloboda 150, St. Petersburg. Manufacture of composite boards, slabs and plates of wood.

20,886. Sept. 21, 1911.—Samuel Abram, North Lodge, Mytton Road, Whalley. Brick and like moulding machines.

21,107. Sept. 25, 1911.—Tom Smith, Uxbridge Engineering Works, Uxbridge Street, Burton-on-Trent, and A. H. O'Brien, 3 Duffield Street, Leicester. Apparatus for heating air and water.

21,162. Sept. 25, 1911.—C. H. Waithman, A.M.I.C.E., Durham House, All Saints Road, Newmarket. Windows.

23,258.—Oct. 21, 1911.—C. H. Hubbard, The Oaks, Prenton Road West, Birkenhead. Fastening or securing means for doors, gates, cupboards or the like.

24,391. Nov. 2, 1911.—Alex. Siewert, Kaiser Wilhelmstr. 6, Lankwitz. Metal beams.

27,539. Dec. 8, 1911.—Thomas Boyd, 289 Featherstall North Road, Oldham. Glazing bars.

28,948. Dec. 22, 1911.—A. D. Mosby, 7113 Normal Avenue, Chicago, Illinois, and H. M. Capron, Ridge Avenue, Winnetka, Illinois, U.S.A. Concrete mixer drums.

279. Jan. 3, 1912.—Solomon Barnes, 189 St. James Street, Montreal. Sand hoppers for moulding machines.

1,589. Jan. 19, 1912.—W. H. Whitmill, Cliftonville, Coniston Road, Earlsdon, Coventry. Means for forcing air into water supply and like systems.

2,252. Dec. 8, 1911.—Thomas Boyd, 289 Featherstall Road North, Oldham. A bar for collecting condensed water from windows or the like.

6,156. March 12, 1912.—Date claimed under International Convention Oct. 11, 1911. Mrs. W. Frank, 148 Krefeldstr., Dusseldorf-Heerd, Germany. Plaster-carrying device for ceilings, walls and the like.

6,684. March 18, 1912.—Date claimed under International Convention March 16, 1911. Armand Avril, 68bis rue du Poteau, Paris, architect. Means for securing metal balusters to the springboards or supports of staircases.

9,833. April 25, 1912.—Hector Verschaffel, rue de l'Harmonie, Haine St. Pierre, Belgium. Means of separating the water from the slurry in the manufacture of Portland cement.

11,066. May 9, 1912.—W. M. Venable, 1204 Westinghouse Buildings, Pittsburgh. Moulds for casting columns *in situ*.

OSRAM WEEK.

NEARLY a year ago the General Electric Co. inaugurated the Osram week campaign, manufacturer, wholesaler, and dealer combining to direct the attention of the public to the most up-to-date methods of electric lighting. In connection with this movement most of the leading electrical contractors, stores, and ironmongers are again holding an exhibition of lighting in their establishments and displaying in their shop windows Osram lamps of various candle powers and voltages, with various other up-to-date electric lighting appliances of every description. When the lamp was introduced it at once effected a saving in current of 75 per cent. compared with the then universally used carbon lamps. It also gave a considerably better light. The most recent addition to the better lighting epoch has been the introduction of a new filament into the Osram lamp. This lamp is now made with a filament of pure drawn tungsten wire, wound in one continuous jointless length.

VARIETIES.

MR. B. T. BATSFORD will shortly publish "A Short Critical History of Architecture," by Mr. H. H. Statham, F.R.I.B.A.

THE Epsom Urban Council has decided to expend £6,194 on a scheme for increasing the sewer capacity in the town so as to prevent flooding.

THE Water Committee of the Tynemouth Town Council has decided upon the provision of a special filtration plant in connection with the borough's water undertaking, to remove the dark stain of the peat and heather from the water. The scheme will cost about £11,500.

THE Gloucester Corporation have recently purchased by auction for £3,500 the building in Southgate Street, near the Cross, known as "The Old Blue Shop and City Tea Warehouse," one of the city's historic houses. The elaborately carved façade of the building is one of the "sights" of Gloucester. The present building is about 260 years old, and has been continuously used since 1746 as a grocery.

It is with sincere regret we record the death of Mr. Vaughan Pendred, for so many years the Editor of our contemporary *The Engineer*. Mr. Pendred became Editor of *The Engineer* in 1865, and retired in 1905 through ill-health, when his son, the present Editor, succeeded him. A man of unflinching courtesy, fine presence, and a scholarly writer, Vaughan Pendred was a man who inspired respect and esteem, and his loss will be felt by many friends in the professions, both of engineering and journalism.

THE committee of the British Constitution Association at a meeting held at its offices, 11 Tothill Street, on the 4th inst., unanimously passed the following resolution:—"That this committee, acting in the interests of individual liberty and personal responsibility, cordially welcomes the recent circular of the Local Government Board in favour of securing the more flexible application of building by-laws in rural areas, and engages itself to do its best to influence the sanitary authorities to give the subject their most careful attention."

THE Royal Institute of the Architects of Ireland held a Council meeting at 31 South Frederick Street, Dublin, last week. The President (Mr. A. E. Murray, R.H.A., F.R.I.B.A.) was in the chair. A large amount of correspondence was dealt with, including letters from the Not-

tingham Architectural Society, the Master Builders' Association, the Surveyors' Institute re Insurance Act. Several names in connection with the election of Hon. Secretary and Hon. Treasurer were considered by Council.

THE Newbold and Whittington Urban Council have been informed that plans and estimates are almost ready for the new sewage disposal works, costing over £7,000.

MESSRS. GEORGE NEWNES, LTD., announce two forthcoming books in their "Country Life" Library. The first is "Gardens for Small Country Houses," by Gertrude Jekyll and Lawrence Weaver, and will be published at 15s. net. The other is a new volume of "English Homes," edited by Mr. H. Avray Tipping, M.A., F.S.A. (42s. net). This will consist entirely of homes of the Early Renaissance period, and show the internal character, furniture, and adornments of notable Elizabethan and Jacobean houses with their gardens.

THE Plans and Works Committee of Edinburgh Town Council last week discussed a letter from the secretary of the Edinburgh, Leith and District Building Trades' Association regarding the fair wages clause in city contracts, and protesting against "the inquisitorial interference in the conduct of their business." In the course of their letter, the Association suggested the rescinding of the resolution regarding the supplementary clauses, and urged the reversion to the old clause in connection with the contracts. This latter clause provides for the payment of "the standard rate of wages or such wages as are generally accepted as fair in the trade," while in the supplementary clauses it is provided that during the three months prior to the date of a tender the contractor must have paid his workpeople not less than the standard rate of wages, and that "in the event of this fair wages clause being broken in any particular, the contractor shall be bound to refund to his workpeople the difference between the amount paid to them and the standard rate of wages, and the Town Council shall be entitled to deduct the amount of the accountant's fee and any other expenses caused through a breach of this contract." The matter was remitted to a sub-committee for consideration and report.

TRADE NOTES.

MR. F. J. BARNES, proprietor of the Portland Stone Quarries, Portland, Dorset, has been honoured with the order for the whole of the Portland stone required for refacing Buckingham Palace. Sir Aston Webb, C.B., R.A., is the architect.

THE bells of Marston Biggott, near Frome, Somerset, are to be retuned and rehung in a new steel frame, complete with the most modern fittings. The work of restoration has been entrusted to Messrs. John Warner & Sons, Ltd., of the Spitalfields Foundry, London. Messrs. John Warner & Sons have in hand a new bell weighing 7½ cwt., note C, for the church of Our Lady of Ransom, Eastbourne.

A LARGE clock has been erected in Maulden Church Tower, Bedfordshire, which shows time on one large dial, plays the Westminster quarter chimes and strikes the hours. The work has been carried out by John Smith & Sons, Midland Clock Works, Derby, who recently erected a similar clock at Silsoe Church, in the same neighbourhood.

MESSRS. GEORGE MILLS & CO., LTD., Radcliffe, Manchester, have received instructions to protect with the "Titan" patent automatic sprinkler the new design of cotton safes that are being erected for the Trafford Park Estates, Manchester, to store 50,000 bales of cotton.

LINDSAY'S PADDINGTON IRONWORKS, LTD., is the name under which in future the old-established business of Lindsay, Neal & Co. will be carried on. Thorough reorganisation of the works has been effected on modern lines, and new plant has been laid down, ensuring prompt delivery of work entrusted to them. The telegraphic address, "Troughing," London, and the telephone number, 74 Paddington, remain as before.

MESSRS. E. H. SHORLAND & BROTHER, LTD., of Failsworth, Manchester, have supplied some of their warm-air ventilating patent Manchester grates to Llanryre Hall, Llandrindod Wells, and to the Milford Haven Catholic Schools; the Eastleigh and Bishopstoke Isolation Hospital is being supplied with Shorland's exhaust roof ventilators; the extensions to the Grammar School, Brigg, are being fitted with their Manchester grates, patent exhaust roof and special inlet ventilators; and the Spittlesea Hospital, Luton, is being supplied with Shorland's warm-air ventilating Manchester stoves, with descending smoke flues and exhaust roof ventilators.

THE Architect and Contract Reporter.

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AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made.
Subscription, \$5.20.

AGENTS FOR AUSTRALIA, NEW ZEALAND, TASMANIA AND CANADA.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie—Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA.—Nov. 1.—The Government of the Dominion of Canada invite from artists who are British subjects competitive designs (in the form of plaster sketch models) for a monument to be erected at Ottawa, to His Late Majesty King Edward VII. The total cost of the monument must not be more than 35,000 dollars. The author of the best design will be awarded the commission of the work, and the second best will receive a prize of 1,000 dollars. All communications must be addressed to The Secretary, Public Works Department, Ottawa, Canada.

(Continued on page 7.)

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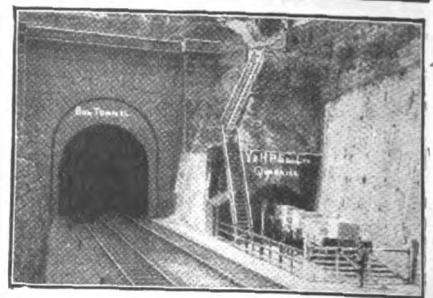
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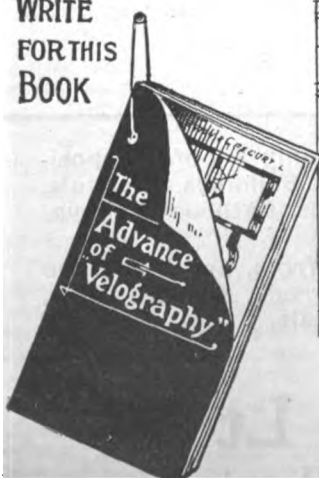
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CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Oct. 29.—The Glasgow Corporation invite architects to submit preliminary sketch designs, in competition, for an extension of the Municipal Buildings. The assessor appointed is Mr. John J. Burnet, LL.D., A.R.S.A. The conditions of competition, with full particulars of the accommodation required, and plans of the present buildings and of the site of the extension, can be obtained from the Town Clerk on payment of £1 1s., which will be refunded on receipt of a bona-fide design, or on the return of these documents within three weeks. From the sketches submitted the authors of not more than five designs will be selected to submit completed drawings in a final competition at a honorarium of 100 guineas each. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HUDDERSFIELD.—Oct. 31.—The Housing and Town Planning Committee of the Corporation invite competitive designs from architects and surveyors for the laying out of certain areas within the county borough and part of an adjacent suburb. The following prizes are offered—namely, first prize, 100 guineas; second prize, 50 guineas; third prize, 25 guineas. Copies of the conditions and other particulars may be obtained on application to the Borough Engineer upon depositing £2 2s. The deposit will be returned on the receipt of bona-fide designs, together with all documents. Mr. K. F. Campbell, M.Inst.C.E., borough engineer, 1 Peel Street, Huddersfield.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

WALES.—Oct. 31.—The Llandudno Urban District Council invite designs for laying out land adjoining the Happy Valley, Llandudno, about 20 acres in extent. A ground plan of the site may be inspected at the office of the Surveyor to the Council, Town Hall, Llandudno. A premium of 50 guineas will be awarded to the author of the design which may be considered the most suitable. Printed particulars and conditions may be obtained from Mr. Alfred Conolly, clerk, Town Hall, Llandudno.

CONTRACTS OPEN.

ALBURY.—Nov. 6.—For building six cottages at Albury, Herts., for the Hadham Rural District Council. Mr. E. T. Watts, surveyor, London Road, Bishop's Stortford.

BARNSELY.—Oct. 31.—For the following works, for the Barnsley Town Council—viz.: (Contract No. 1) erection of wholesale shops off Midland Street, Barnsley; and (2) providing and fixing iron fenceings, hurdles, gates, and other works of paving, draining, &c., required in the conversion of a part of the present wholesale greengrocers' market into a cattle market in Midland Street. Mr. J. H. Taylor, M.I.C.E., borough surveyor, Manor House, Barnsley.

BARTLEY GREEN.—Nov. 18.—For erection of a Council School in Brook Lane, Woodgate, for the Birmingham Education Committee. (Messrs. Crouch, Butler & Savage, architects, 39 Newhall Street, Birmingham.) Send names and £2 deposit by Oct. 20 to the Finance Department, Education Offices, Council House, Birmingham.

BATH.—Nov. 4.—For the complete construction and erection of masonry retaining wall, stone balustrade, &c., in the Orange Grove, for the City Council. Deposit £2 2s. The City Surveyor's Office, Guildhall, Bath.

BOLTON.—Nov. 4.—For the cottage homes extensions and for the conversion of the Townley's House into a receiving home, for the Guardians. Deposit £5. Mr. J. Ward, architect, 24 Mawdsley Street, Bolton.

CHELTHENHAM.—Oct. 26.—For domestic science buildings at Gloucester Road and Naunton Park schools. Send names before Oct. 26 to Messrs. Chatters & Smithson, architects, 17 Regent Street, Cheltenham.

CLEETHORPES.—Nov. 11.—For erection of a bandstand at the end of Kingsway and two shelters in the bastions of the Parade. Mr. C. H. Waithman, A.M.I.C.E., engineer and surveyor, Council House, Cleethorpes, Lincs.

EXETER.—Nov. 7.—For additions and alterations to the Royal West of England Institution for the Deaf and Dumb. Mr. J. Jerman, F.R.I.B.A., architect, 1 Bedford Circus, Exeter.

GLEDHOLT.—Nov. 1.—For the various works required in erection of a detached house in Grasmere Road. Messrs. J. B. Abbey & Son, architects and surveyors, 34a New Street, Huddersfield.

EMSWORTH.—Oct. 30.—For the demolition of seven cottages at Emsworth, for the West Sussex County Council. Mr. H. W. Bowen, A.M.Inst.C.E., County surveyor, Horsa-ham.

GRAVESEND.—Nov. 6.—For erection of an additional building to the vagrant wards at the workhouse, for the Guardians of Gravesend and Milton Union. Mr. E. J. Bennett, A.R.I.B.A., architect, 191 Parrock Street, Gravesend.

HARROGATE.—Oct. 28.—For the respective trades of mason and bricklayer, carpenter and joiner, plasterer, painter, and furnisher in connection with alterations to the end wings of the Victoria Baths, for the Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Harrogate.

HOLMFIRTH.—Oct. 29.—For the various works required in erection of a hippodrome in Eldon Yard. Mr. P. N. Brown, architect, Hawthorn Bank, Holmfirth.

IRELAND.—For completion of premises at Cushendall, for Mr. P. McAllister. Mr. J. A. Hanna, architect, Ocean Buildings, Belfast.

IRELAND.—Oct. 29.—For erection of a fisherman's shelter at the dockyard, near the stone bridge, for the Wicklow Harbour Commissioners. Mr. F. W. MacPhail, secretary, Town Hall, Wicklow.

IRELAND.—Oct. 31.—The Pembroke Urban District Council invite tenders for the erection of a pier, promenade, sea and other baths, and pavilion, and repairs to existing pier, and all works incident to and connected therewith, at Mer-rion, co. Dublin. Deposit £3 3s. Mr. J. C. Manly, clerk, Town Hall, Ballsbridge, Pembroke, co. Dublin.

IRELAND.—Nov. 1.—For erection of fifty artisans' and labourers' houses in two blocks of seven and two of eight each at Carrignafoy, and in four blocks of five each at Ballyvoloon, with necessary walls and fences, laying out grounds, and all other prescribed work, for the Queenstown Urban District Council. Deposit £2. (Mr. J. A. McCarthy, C.E., Timoleague.) Mr. J. H. Campbell, town clerk, Town Hall, Queenstown.

IRELAND.—Nov. 1.—For the erection of a new day room and a heating system at the sanatorium, Crooksling, Brittas, county Dublin, for the Dublin Joint Hospital Board. Deposit £1 1s. Mr. T. F. McNamara, C.E., architect, 192 Great Brunswick Street, Dublin.

IRELAND.—Nov. 4.—For erection and furnishing of National school buildings at Coolnoohill, Kilgarvan, co. Kerry. The Office of Public Works, Dublin, and Kilgarvan Royal Irish Constabulary Barrack.

IRELAND.—Nov. 8.—For erection and furnishing of National school buildings at Knockroe, Boyle, county Roscommon. The Office of Public Works, Dublin, and Royal Irish Constabulary Barracks, Boyle.

IRELAND.—Nov. 11.—For the erection of a masonry market house 100 feet by 40 feet at Ardara, county Donegal, for the Congested Districts Board. Mr. W. Chambers, Woodhill, Ardara, county Donegal.

LEEK.—Oct. 28.—For erection of a Council School to accommodate 454 children, for the Staffordshire Education Committee. Send applications and £1 1s. deposit to Mr. Graham Balfour, director of education, County Education Offices, Stafford.

LICHFIELD.—Nov. 15.—Tenders are required by the War Department for repairs and materials from Dec. 26, 1912, until March 30, 1914, at Lichfield. Send application by Oct. 31 to the Commanding Royal Engineer, R.E. Office, 13 Wenlock Terrace, York.

LONDON.—Nov. 1.—For erection of boundary wall, iron railings, and gateways at the Victoria Tower Gardens, London, S.W., for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. H. A. Collins, H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Nov. 6.—For demolishing 155 and 157 Peckham Rye, Peckham, S.E., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, Office of the Board, Embankment, E.C.

LYMINGTON.—Oct. 30.—For alterations to the cells, the provision of a prisoner's w.c. and lavatory, together with other work, at Lymington police station, Hants. Deposit £2 2s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

MAIDENHEAD.—Nov. 2.—For certain additions to the engine house buildings at their electric light station in Braywick Road, for the Town Council. Mr. P. Johns, borough surveyor, Guildhall, Maidenhead.

MANCHESTER.—Oct. 28.—For males' and females' conveniences at Phillips Park. Deposit 10s. 6d. The City Architect, Town Hall, Manchester.

NEWBRIDGE (MON.).—Nov. 1.—For the erection of ten pairs of semi-detached houses (more or less), for the Bryn Building Club. Messrs. Jenkins, James & Co., architects, Newbridge and Crumlin, Mon.

NORWICH.—Nov. 22.—For erection of a shelter at the cemetery in place of the one recently destroyed by fire, for the Burial Board. Mr. A. E. Collins, M.I.C.E., city engineer, Guildhall, Norwich.

PONTLLANFRAITH.—Oct. 28.—For erection of Council offices, caretaker's house, and outbuildings at Pontllanfraith, Mon., for the Mynyddislwyn Urban District Council. Mr. W. A. Griffiths, architect, Post Office Chambers, Pontllanfraith, Mon.

PORTSMOUTH.—Nov. 19.—For erection, completion and maintaining in repair for six months the following works, for the Corporation—viz.: (1) a block of ferro-concrete (Hennebique) stores and offices on the Camber Quay, Portsmouth (deposit £3 3s.); and (2) a boatswain's office, meters' office, labourers' room, and gentlemen's convenience at Flat-house Wharf (deposit £2 2s.), all in the borough of Portsmouth. The Borough Engineer's Offices, Town Hall, Portsmouth.

RAMSGATE.—Oct. 31.—For erection of a room for fire-alarm fittings and other works in connection therewith at the fire brigade station. Mr. T. G. Taylor, borough engineer, Albion House, Ramsgate.

SALTBURN.—Oct. 29.—For the whole of the work required in alterations and additions to Saltburn elementary Council School, for the North Riding of Yorkshire County Education Committee. Mr. J. C. Wrigley, secretary, Education Offices, Northallerton.

SCOTLAND.—Oct. 28.—For the various works in proposed children's home, Crewe Road, Edinburgh, for the Edinburgh Parish Council—viz.: Mason and bricklayer, iron, joiner, plumber, plasterer, slater, heating, and painter. Mr. R. M. Cameron, architect, 53 Great King Street, Edinburgh.

SCOTLAND.—Oct. 31.—For mason, joiner, plumber, and plaster work of public conveniences to be erected in the third ward, for the Kirkcaldy Town Council. The Borough Surveyor's Office, Kirkcaldy.

SHIPLEY.—Oct. 29.—For the various works required in the reinstatement and extension of Dock Mill, for the Urban District Council. Messrs. J. G. Thompson & Son, fire loss assessors, 9 Parkinson's Chambers, Hustlergate, Bradford.

SLOUGH.—Nov. 6.—For provision and erection of buildings, furnaces, boilers and chimney, &c., at the pumping station at Chalvey, for the Slough Urban District Council. Deposits in cash as follows:—(Contract A), £2 (buildings), (B), £3 (furnaces, &c.). The Town Surveyor's Office, William Street, Slough.

SUNDERLAND.—Oct. 30.—For erection of additions to the workhouse infirmary, Hylton Road. Deposit £2 2s. Messrs. W. & T. R. Milburn, F.F.R.I.B.A., architects, 19 Fawcett Street, Sunderland.

THURNSCOE.—For the various works required in erection of a picture palace in Lidgett Lane. Send names to Mr. E. W. Dyson, Lic.R.I.B.A., architect, 10 Regent Street, Barnsley.

WALES.—Oct. 29.—For the erection of a goods shed at Pontardulais Station, Glam., for the London and North-Western and Great Western Joint Railway. The Engineer, Great Western Railway, Paddington Station, London, W.

WALES.—Oct. 29.—For erection of a bakery at Senghenydd. The Manager, the Senghenydd and Aber Valley Co-operative Society, Ltd.

WALES.—Nov. 1.—For erection of attendants' house, committee room, &c., at Pontsticill Junction in connection with the proposed Taf Fechan reservoir, for the Merthyr Tydfil Town Council. Deposit £1 1s. The Borough Waterworks Engineer, 101 High Street, Merthyr Tydfil.

WALES.—Nov. 4.—For erection of workmen's dwellings at Trefechan, for the Town Council. Mr. R. Jones, borough surveyor, Smithfield Road, Aberystwyth.

WALES.—Nov. 5.—For erection of additional offices at the workhouse, Tredegar, for the Guardians of Bedwelty Union. Deposit £1 1s. Messrs. James & Morgan, F.F.R.I.B.A., Charles Street Chambers, Cardiff.

WANSTEAD.—Nov. 7.—For erection of a fire brigade station in Wanstead Place, at the corner of Fitzgerald Road. Deposit £1. Mr. C. H. Brassey, F.S.I. surveyor, Council Offices, Wanstead, N.E.

WHITCHURCH.—Oct. 28.—For erection of a Council School at Whitchurch (near Bristol), for the Somerset County Council (Education Committee). Mr. A. J. Pictor, A.R.I.B.A., architect, Bruton, and the Whitchurch C.E. School.

USHAW MOOR (DURHAM).—Oct. 31.—For erection of a house and shop, for Messrs. R. & C. Witty. Mr. G. Ord, architect and surveyor, 16 The Avenue, Durham.

TENDERS.

CULLOMPTON.

For erection of a Unitarian chapel. Mr. R. M. CHALLICE, architect, Exeter.

Keitch	£1,750 0 0
Nicks Bros.	1,090 15 0
Westcott, Austin & White	1,070 0 0
Spiller & Son	1,018 0 0
Ham & Passmore	1,015 0 0
Setter & Son	992 0 0
Taylor	990 16 0
LABDON & SONS, Cullompton (accepted)	899 0 0

EAST BARNET.

For alterations and additions to the Brunswick Park C.C. School, for the Herts. County Council. Mr. U. A. SMITH, county surveyor, Hatfield.

Bronsdon & Son	£1,487 3 3
Hacksley Bros.	1,440 0 0
Wiggs & Son	1,415 8 0
Dudley	1,413 10 6
Blow & Peters	1,369 2 7
A. & B. Hanson	1,320 0 0
Glasscock & Son	1,291 16 2
Henson & Son	1,275 11 6
D. ROBINSON, JUN., Stansted (accepted).	1,225 10 6

GUISBOROUGH.

For the erection of homes to accommodate twenty-six children, for the Guardians.

J. G. PORTEOUS, Guisborough (accepted)	£2,157 0 0
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HARROGATE.

For the redecoration of central hall and Turkish baths at the Royal Baths. Mr. C. E. RIVERS, A.M.I.C.E., borough engineer, Harrogate.

De Jong & Co.	£467 0 0
W. Rae Pixton & Co.	329 17 6
Pollard & Sons	299 10 0
Noddings & Son	287 10 0
Morley & Son	271 0 0
Decorative Supply Co.	257 0 0
Brown	225 0 0
Broadbank & Co.	210 0 0
Holdsworth	196 0 0
GOODALLS, LTD., Manchester (accepted)	190 0 0

For the erection of boundary walls to the new cemetery, Wetherby Lane. Mr. C. E. RIVERS, A.M.I.C.E., borough engineer, Harrogate.

Webster	£724 18 0
Dawson & Son	605 0 0
Godfrey	600 0 0
Hymas	574 0 0
Kershaw & Hill	568 16 0
G. & C. Winterburn	488 0 0
Birkinshaw	449 12 9
C. A. NETTLETON, Harrogate (accepted)	442 0 0

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HORSHAM.

For the construction of a refuse destructor in connection with the electricity works.		
Meldrum Brothers	£1,495	0 0
Goddard, Massey & Warner	1,472	15 0
Heenan & Froude	1,450	0 0
Horsfall Destructor Co.	1,292	0 0
Manlove, Alliott & Co.	1,169	0 0
Hughes & Stirling	987	0 0
Engineer's estimate	1,150	0 0

LONDON.

For supply of additional gas meter testing apparatus at the Newington and Westminster testing offices, including a lift at the Westminster office, for the London County Council.

Gas Meter Testing Apparatus.

Parkinson & W. B. Cowan	£805	0 0
GAS METER CO., LTD., 238 Kingsland Road, N.E. (accepted)	679	4 0

Lift.

Waygood & Co.	£95	0 0
Easton Lift Co.	80	0 0
STANNAH, Bankside, S.E. (accepted)	70	0 0

For supply of sliding poles at the Dulwich, Fulham, and Shadwell fire stations, certain minor alterations at the Shadwell station, and adaptation of the Dulwich and Fulham stations for motor instead of horsed appliances, for the London County Council.

Marsland & Sons	£2,355	0 0
Ashby & Horner	1,775	0 0
F. & T. Thorne	1,682	0 0
H. L. Holloway	1,609	0 0
J. & C. Bowyer	1,603	0 0
Higgs & Hill	1,540	0 0
ROBERTS & Co., 74 Earl's Court Road, W. (recommended)	1,435	0 0
Architect's estimate	1,545	0 0

For enlargement of Senrab Street school, Stepney, for the London County Council.</

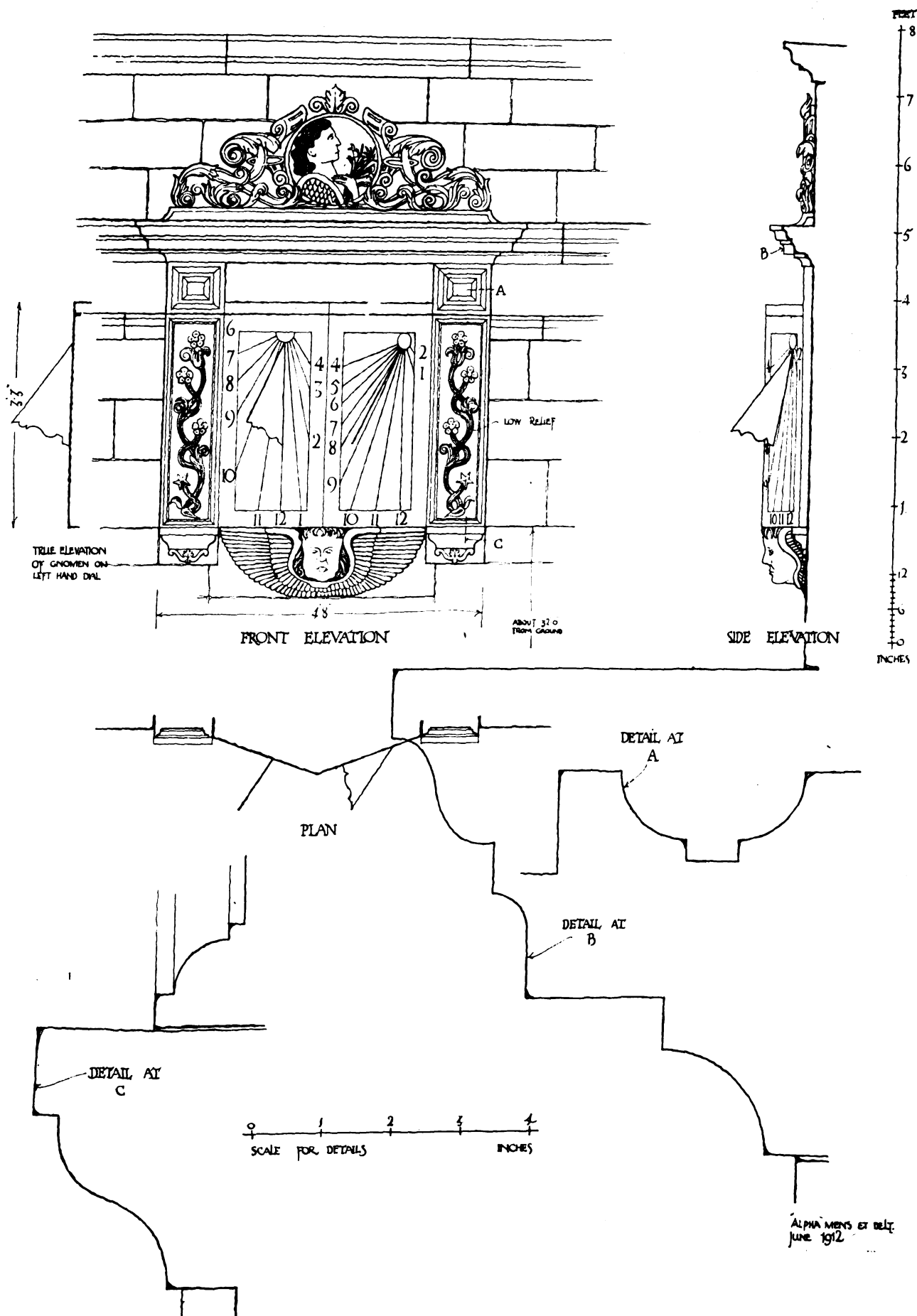
"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

*Heriot's Hospital Edinburgh
The Sundial on North wall of
Courtyard. Alpha June 1912*



"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

HERIOT'S HOSPITAL, EDINBURGH
THE SUNDIAL ON NORTH WALL OF COURTYARD



BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CAMBRIDGESHIRE.

Cambridge.—Cheshunt College (£20,000). Mr. P. M. Horder, F.R.I.B.A. (of London), architect.

CORNWALL.

Perranuthnoe.—Bungalow. (Apply Mr. Dennis, Berran Cross Lanes, near Marazion.)

CUMBERLAND.

Carlisle.—Warehouse, Colville Terrace, for Messrs. R. R. Buck & Sons.

Fifty houses, Blackhall Road (adjoining), for Mr. Ferguson.

DERBYSHIRE.

Darley, North.—Church, Hackney Lane.

Long Eaton.—Memorial Cottage Hospital.

Parwich.—Six workmen's dwelling-houses.

DEVON.

Exeter.—Guardians' Home for children (£7,000)

Holworthy.—Drill Hall, &c. Messrs. Ellis, Son & Bowden (of Exeter), architects.

ESSEX.

Goodmayes.—All Saints' Church for 700 sittings (£10,000).

Mr. P. K. Allen (of Tunbridge Wells), architect.

Messrs. Dove Brothers, Ltd. (of London), contractors.

Ongar.—Guardians' Cottage Homes.

Ramsden Bellhouse.—Three pairs of semi-detached cottages. Mr. H. R. Bird (of Brentwood), architect.

Romford.—Children's Isolation Hospital (£500).

Southend-on-Sea.—Bungalow, Chalkwell Park Drive, for Mr. F. W. Goldsworthy.

Bungalow, Northview Drive, for Mr. J. Atkinson.

Bungalow, Bournemouth Park Road, for Mr. J. Sears.

Business premises, Leigh Rd. East, for Mr. Costin.

Six houses, Brightwell Avenue, for Mr. H. Wheeler.

Seven houses, Central Avenue, for Mr. J. Roach.

Twelve houses, Central Avenue, for Mr. C. T. Standen.

Twelve houses, Coleman's Avenue, for Mr. C. Agar.

Twelve houses, North Avenue, for Mr. J. Sears.

Six houses, Shaftesbury Avenue, for Mr. J. C. Ingram.

House, Shaftesbury Avenue, for Mr. H. Musgrave.

Two houses, Sunningdale Avenue, for Mr. H. Budd.

Four houses, Westcliff Park Drive, for Mr. C. May.

House, Undercliff Gardens, for Mrs. B. C. Travers.

Two houses, Avenue Road, for Mr. S. H. Rugg.

Six houses, Bournemouth Park Road, for Mr. J. Calcutt.

House, Eastwood Road, for Mr. J. W. B. Bane.

House, Hillside Road, for Mr. W. R. James.

Two houses, Inverness Road, for Mr. T. Ridd.

House, Uplands Road, for Mr. A. Crane.

Four houses, Moseley Street, for Mr. C. Wingrave, junr.

Three houses, Upper Whitegate Road, for Mr. E. A. Cave.

Picture Theatre, Leigh Road, for Raymond Animated Picture Co.

Warehouses, London Road, for Mr. G. Jackaman.

Tilbury.—Council working-class houses. Messrs. Pepler & Allen, A.R.I.B.A. (of London), architects.

Tolleshunt Major.—Workmen's dwellings.

GLoucestershire.

Bristol.—Public elementary school (for 500 to 600 places).

Baptist Street.

ISLE OF WIGHT.

Ventnor.—No. 2 Marine Parade: alterations for Mr. E. J. Harvey.

KENT.

Bromley.—House, Durham Avenue. Messrs. R. A. Lowe & Co. (of Chislehurst), builders.

"The Knoll," Scott's Avenue: additions for Messrs. Jones & Andrews.

Five houses, Arrol Road, for Mr. A. W. Keen.

Five houses, Shrewsbury Road, for Mr. W. Davies.

House, plot 28, Manor Way, for Mr. J. Overal.

House, plot 87, Wickham Way, for Messrs. H. & G. Taylor.

Parish Room extension at All Saints, Beckenham Road, for Rev. C. Ritson.

LANCASHIRE.

Blackburn.—St. Michael's Church: Parish Hall.

Bolton.—Electric Power Station, Back-o'-th'-Bank.

Fifteen houses, Cloister Street, for Mr. G. Hargreaves.

Fish Market.

Horwich.—Conservative Club extension.

Oldham.—Picture Hall, Union Street.

Prestolee.—Sunday School (£2,000). Mr. G. Crowther, architect.

LINCOLNSHIRE.

Lincoln.—Memorial Sanatorium (£10,000).

MIDDLESEX.

Woodside Park.—St. Barnabas Church (£7,000). Mr. J. S. Alder (of London), architect.

NORTHAMPTONSHIRE.

Bugbrooke.—Church restoration.

Northampton.—Girls' Secondary School.

NORTHUMBERLAND.

Newcastle-upon-Tyne.—Picture Hall, Lisle Street, for 1,500 to 1,600 sittings.

SHROPSHIRE.

St. George's.—Parish Church: tower (£1,600).

Shrewsbury.—Sixty-two houses, on the Comet Field. Mr. A. E. Williams, architect.

Wellington.—Workhouse children's quarters. Mr. A. Jenkins, architect.

SOMERSET.

Bath.—Secondary school for 200 places (£10,000).

Ycovil.—Nine houses, St. Mildred's Avenue, for Mr. E. F. Dodge.

Two houses, Crofton Park. Messrs. Bird & Pippard, builders.

"The Grange," The Park: alterations. Messrs. J. W. & H. Chibly, builders.

Additions to houses in Alexandra, Glenville, and Percy Roads, for Mr. J. Reeves.

Two houses, Mill Road: additions for Mrs. Clothier.

STAFFORDSHIRE.

Sedgely.—Mission Church, The Straits.

Wesleyan Chapel, Himley Road: additions to the school classroom.

Stafford.—Isolation Hospital extension.

SURREY.

Richmond.—Dairy, Burdett Road. Messrs. Worsfold & Hayward (of London), architects.

Nos. 19 and 21 The Quadrant: additions and alterations, for Messrs. Waters & Lewis.

SUSSEX.

Chichester.—Guardians' Home for children.

Crowborough.—Drill Hall and headquarters, &c., Fermor Road.

Horsham.—Baptist Church, Denne Road, for Mr. C. Neal.

Pair of cottages, Oakhill Road, for Mr. N. Voice.

Cinematograph Theatre, West Street, for Messrs. Everett, Morgan & Grundy.

Preston.—Church Hall, Knowle Road, for 400 sittings.

WARWICKSHIRE.

Nuneaton.—London and North-Western Railway Station.

WORCESTERSHIRE.

Bromsgrove.—Hospital: Tuberculosis wards for fourteen patients (£1,750). Mr. A. B. Rowe, County architect (Worcester).

YORKSHIRE.

Doncaster.—Yorkshire Institution for the Deaf and Dumb: additions (£4,500).

Ecclesall.—Workhouse: operating theatre (£700).

Penistone.—Public Hall and Council Offices (£3,500).

Selby.—Thirty to fifty working-class houses.

Fifty working-class houses, Armoury Lane.

WALES.

Abercwmboi.—Institute and library, High Road.

Aberystwyth.—Workmen's dwellings, Trefechan.

Denbigh.—Tyn-yr-Eithin Farm: additions and alterations. Mr. J. Hughes, architect.

Ferndale.—Blaenllechau Council School: additions and alterations. Mr. J. Rees (of Pentre), architect.

Llandilo.—Workhouse Infirmary.

Llandudno.—Imperial Hotel: alterations.

Pentre.—Cwmelydach Council School: alterations. Mr. J. Rees, architect.

Rhyl.—Market Hall reconstruction. Council surveyor.

Swansea.—Nos. 7-11 Castle Street: reconstruction.

Wrexham.—Workhouse alterations (£900). Mr. F. A. Bevan, architect.

SCOTLAND.

- Buckhaven.**—Doctor's house, Denbeath, for the Wemyss Coal Co.
- Campbeltown.**—Infectious diseases hospital: addition for consumptive patients (£1,000).
- Crossgates.**—House for Mr. C. Walls.
- Dundee.**—Lilybank Foundry, Kemback Street: addition for the Caledon Shipbuilding and Engineering Co., Ltd.
- Villa, Hillcrest Road,** for Mr. S. C. Lumsden.
- Semi-detached villas, Nevill Street,** for Mr. G. Lamb and Mr. N. Matheson.
- "Wellburn," off Liff Road:** addition for the Little Sisters of the Poor.
- Invalid Children's Recovery School,** Downfield.
- Dunfermline.**—Offices and garage, Castleblair, for Mr. J. G. Thomson.
- Stables, North Inglis Street,** for Mr. H. Elder.
- Stables and sheds, Low Beveridgewell,** for Mr. J. Rintoul.
- Tenement of houses, Rumblingwell,** for Mr. R. C. Morton.
- Tenement of eight houses, Townhill Road.** Messrs. J. Stewart & Son, builders.
- Kilmarnock.**—Infirmary reconstruction.
- Kirkcaldy.**—Picture house, Post Braes, for the East of Scotland Investment and Improvement Co., Ltd. (Edinburgh).
- Picture house, Whyte's Causeway and Park Road,** for the Kirkcaldy Kinema Co.
- Paisley.**—Works, Gordon Street: additions and alterations for Messrs. J. Paton, Ltd.
- Patna.**—U.F. Manse (£1,250).
- Port Glasgow.**—Passenger Station (£15,000 to £20,000).
- Ratray.**—U.F. Church and Halls, Balmoral Road (£2,500.) Mr. L. Falconer (of Blairgowrie), architect.
- Stirling.**—Parish Church restoration. Messrs. Macgibbon & Rees (of Edinburgh), architects.

PATENT SPECIFICATIONS PUBLISHED
OCTOBER 17, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

- No. 16,974. July 25, 1911.—Samuel Pope, 34 Clarendon Road West, Chorlton-cum-Hardy. Manufacture of pigments.
- 18,818. Aug. 21, 1911.—Date claimed under International Convention Aug. 22, 1910. C. F. Boehringer & Soehne, Mannheim, Waldhof, Germany. New materials for coating and impregnating purposes.
- 20,798. Sept. 20, 1911.—Rudge-Whitworth, Ltd., and H. L. Heathcote, Rudge Works, Coventry. Preparation and use of solutions for the treatment of iron or steel for the prevention of oxidation or rust.
- 21,426. Sept. 28, 1911.—Date claimed under International Convention Oct. 7, 1910. Leduc, Heitz & Co., 30 rue St. Placide, Paris. Process for the preparation and application of varnish, having a basis of cellulose esters.
- 22,960. Oct. 18, 1911.—E. V. Bailey, Great Hampton Row, Birmingham. Means for securing door or other knobs or handles, cupboard-turns, or the like to their spindles.
- 23,241. Oct. 21, 1911.—Arnold England, Carlton Chambers, St. Annes-on-Sea. Building blocks or slabs of concrete or similar material.
- 23,654. Oct. 26, 1911.—Henry Turner, 43 Brook Road, Meersbrook Park, Sheffield. Clips for junctions or fractures of pipes, &c.
- 24,260. Nov. 1, 1911.—E. M. Knight, 11 Southampton Buildings, W.C. Hinge pins.
- 24,795. Nov. 7, 1911.—Carl Ekberg, 334 East Fortieth Street, New York. Combined floor planer and scraper.
- 25,777. Nov. 18, 1911.—A. L. Gibson, W. P. Gibson and W. H. Ross, Radnor Works, Strawberry Vale, Twickenham. Rolling shutters, partitions or the like.
- 26,150. Nov. 22, 1911.—W. C. Benedict, 59 Newington Butts, S.E. Paving blocks.
- 27,096. Dec. 4, 1911.—F. H. Edwards, 69 Dean Street, Soho, W. Means and method of finishing and attaching textile fabrics to floors, walls and the like surfaces.
260. Jan. 3, 1912.—H. L. Allensby, 8 Village Road, and E. R. Q. Gibson, 31 Millais Road, Enfield. Adjustable stock for hand brickmaking.

301. Jan. 4, 1912.—J. V. Kaye, South Accommodation Road, Hunslet, Leeds, and T. H. Llewellyn, 93 High Holborn, London. Door-holding device.
723. Jan. 9, 1912.—British Thomson-Houston Co., 83 Cannon Street, E.C. Electrically heated stoves.
- 6,926. March 20, 1912.—Tryggve Larssen, 6 Rovekamp, Bremen, Germany, and The Firm Deutsch-Luzemburgische Bergwerks-und Hutten-Aktiengesell., Bochum, Germany. Sheet metal piling.
- 8,517. April 10, 1912.—W. J. Swain, architect, Bell Vue House, Haxby Road, York. Reinforcements for concrete structures.
- 9,900. April 26, 1912.—W. H. Sturge, 35 Carpenter Road, Edgbaston, Birmingham. Devices for adjustably suspending electric and other lamps, electroliers, gas pendants, and the like.
- 10,394. May 2, 1912.—E. W. Brackenbury, Milwaukee, Wisconsin, U.S.A. Concrete mixers.
- 10,932. May 8, 1912.—Josef Schilling, 19 Fringstr., Christian Muller, 11 Adolfstr., and M. Gierlich, Salzstr., Neuss am Rhein, Germany. Device for opening and closing fanlights.
- 11,777. May 17, 1912.—South Metropolitan Gas Co. and Dean Chandler, 709 Old Kent Road, S.E. Gas fires.
- 12,583. May 28, 1912.—L. H. Manning, Parmele, Martin, North Carolina, U.S.A. Window shutters.
- 16,258. July 11, 1912.—R. A. O'Driscoll, "Roborough," Valley Road, Streatham. Means for heating water.

THE NEW WATERLOO STATION.

ENGLISH railway stations are not the cause of much national pride, for it is generally admitted that they do such things better abroad. There have been numerous contributory causes for this regrettable fact, one of them being a too great reliance placed upon the artistic ability of railway engineers. Another was their haphazard growth. Even in America this lack of foresight is apparent, and we find re-arrangement of the railways to be one of the leading features of plans prepared for the improvement of Washington and Chicago. Perhaps the most glaring instance of "how not to do it" which will occur to visitors to London is Waterloo Station. Commenced in 1848, this terminus was considerably enlarged in 1860 by a North station and again in 1878 by a South station. The result was extraordinarily confusing. About twelve years ago the London and South-Western Railway Company obtained Parliamentary powers to enlarge and improve their station. The huge work is not yet completed, and will probably involve an outlay of £2,000,000 at least.

It is worth while paying a visit to Waterloo just now in order to see the metamorphosis in actual progress, and so contrast the old with the new. A considerable amount of the old metal-framing still remains in position, enclosed like a doll's house under the fine new building. Architecturally, Waterloo is extremely interesting; its engineering aspect has clearly been allowed to dominate—as was perhaps inevitable. But the difficult problem has been courageously tackled, and the result reflects great credit on the Company's staff. In no respect is the improvement more striking than in the amount of daylight which now floods every platform. In the old days this station was of the most melancholy and gloomy description. All this has been changed, and it is now a veritable crystal palace. Of the construction of the ridge and furrow type of roof we need not speak. Glazing five bays of 120-foot span and one of 80 feet over successive railway platforms was no light task. The whole of this (as well as various screens) has been carried out by Messrs. W. E. Rendle & Co., Ltd., 5 Victoria Street, S.W., with their "Invincible" glazing. The firm have fixed millions of feet of glass roofing in many parts of the world. At Waterloo Station the area when completed will be 450,000 feet superficial. Another large and successful contract in London is Victoria Station, a third is at the Victoria and Albert Museum. The three chief points about their system is no painting, no putty, no leaking. The firm will be congratulated wholeheartedly by all who remember the old station and know the new.

THE Sheffield master builders have given the advance in wages from 9½d. to 10d. an hour asked for by the bricklayers. The increase will affect about 1,500 men, and will commence in October 1913.

MR. GEORGE TUNSTAL REDMAYNE, of Haslemere, Surrey, formerly in business in Newcastle as an architect, left estate of the gross value of £30,210 13s. 7d., of which the net personality has been sworn at £21,273 9s. 6d.

GLASGOW INSTITUTE OF ARCHITECTS.

THE quarterly general meeting of the Glasgow Institute of Architects was held last week in the secretary's chambers, 115 St. Vincent Street—Mr. John Watson, Lic.R.I.B.A., Vice-President, in the chair. Mr. C. J. MacLean, the Secretary, reported what the Council had done as to the following among other matters which had been dealt with since the last meeting:—(1) Housing and town planning conference; (2) Royal Institute requiring full affix to be used by licentiates; (3) several public competitions, the conditions of which have been found unsatisfactory, were barred by the Institute, but in some cases the conditions were amended; (4) deputation to Town Council regarding proposed carrying out of extension of Municipal Buildings by City Engineer, which had the effect of getting the Town Council to decide that competitive plans and designs be invited from outside architects for the erection of these buildings; (5) revision of rules for measurement and conditions of contracts; (6) report that Aberdeen Society was prepared to recommend a special rule as to architectural competitions on the lines recently adopted by the Glasgow Institute. The Glasgow Institute prize for the best set of measured drawings and sketches by pupils in the Royal Technical College has been awarded to Mr. A. G. Glen. The report of the Council was approved.

VARIETIES.

THE Rhyl Town Council have decided to invite qualified engineers to submit competitive schemes for repairing the pier at a cost of £10,000.

THE Pershore Rural Council have appointed Messrs. Dicks & Waldron, of Evesham, as architects for the proposed housing scheme at Pinvin. Plans are to be prepared for sixteen cottages costing £150 each.

THE Metropolitan Water Board on Friday last decided to provide new works in the Kent district at a total cost of £89,395, including a new well and pumping machinery at Shortlands to cost £30,000, and a new main between Addington Road and Lock's Bottom.

THE Tynemouth Town Council have accepted a scheme for the installation of a special filtration plant at an estimated capital expenditure of £12,650, to eliminate the brown stain from the water supplied from the Corporation's Font Waterworks.

THE Leeds City Council last week instructed the Parliamentary Committee to include in their next Bill powers for acquiring a site of six acres in South Accommodation Road for an electricity and refuse destructor station at a cost of £60,000. The proposed new electrical works are estimated to cost £595,000.

DETERMINATION to run no risks was wisely shown by an architect just recently when he specified that all the cement work required for a Carnegie Library about to be erected from his design should be treated with "Pudlo." It is essential that a library should be absolutely damp-proof—hence the wisdom of employing this powder for rendering the cement water-proof.

MESSRS. CLEMENT TALBOT, LTD., automobile engineers, Barby Road, W., have received by the last mail official intimation of a remarkable success in a petrol-consumption test held at Sydney by the Automobile Club of Australia. In this test a 12-h.p. Talbot was driven over the course of thirty miles on 2.3 pints of petrol. This is equivalent to no less than ninety-six miles to the gallon. Such an extraordinary performance will add still more interest to the Invincible Talbot Stand, No. 69, at the forthcoming Motor Show at Olympia, where representative cars will be exhibited.

THE premises of Messrs. Fowler & Brock, of King Street, South Shields, have recently been altered and enlarged at a total cost of £3,500. The buildings, with their floor space of 2,420 square yards, are now amongst the largest and most convenient in the district. Mr. Jas. Carruthers, of South Shields, was the general contractor, and the architect was Mr. H. Grieves, A.R.I.B.A., of Albany Chambers, South Shields.

THE Brompton Rural District Council have accepted the scheme of sewerage and sewage disposal for Castle Carrock prepared by the engineers Messrs. Taylor & Wallin (Mr. Harry W. Taylor, A.M.I.C.E.), of Newcastle and Birmingham. The sewage will gravitate to the outfall, and be disposed of in modern bacterial works. Application for the necessary loan is to be made at once to the Local Government Board.

THE North-East Lancashire building labourers, following the example of the local masons and wallers, have lodged a number of demands with the employers. The chief of these are: That the current rate of wages for builders' and bricklayers' labourers be 7d. per hour all the year round, with the exception of overtime; overtime to be paid at the following rates—time-and-a-quarter for the first two hours, time-and-a-half to midnight, double time on Sunday, Christmas Day, and Good Friday, time-and-a-half for work on general mill holidays; a labourer to carry not more than nine bricks at once up the ladder and not more than ten on the floor; no navy to be allowed to carry bricks on the floor; in cases of dispute five employers and five employees to act as a committee to settle the disputes, their decision to be final; the current rate for plasterers to be 8d. per hour; one man to labour for two plasterers all round, three for skimming and cornering.

THE Edinburgh Building Trades' Federation and the Electrical Contractors' Association recently protested against the terms of the Corporation fair wages clause in contracts. The complaints were considered by a sub-committee of the Plans and Works Committee of the Edinburgh Town Council last week. Objection was taken to the clause on the ground that it was inquisitorial and oppressive, as a contractor was held to have given assurance that for a period of three months prior to the contract he had paid the standard rate of wages, and the Corporation had power to examine the books of a contractor in event of a dispute arising as to the rate of wages paid. The sub-committee agreed to recommend that the Council adhere to the present form of the clause.

A SPECIAL meeting of the Council of the Royal Institute of the Architects of Ireland was held at the Institute Rooms, No. 31 South Frederick Street, Dublin, on Monday. In the absence of the President, the Vice-President (Mr. R. Caulfeild Orpen, B.A.) occupied the chair, and there were also present Messrs. G. P. Sheridan, J. H. Webb, H. Allberry, F. Batchelor, F. Hicks, C. H. Ashworth, L. O'Callaghan, W. Kaye-Parry, and C. A. Owen, Hon. Secretary. A considerable amount of correspondence was dealt with. The conditions governing the competition for the design of the new municipal offices for the Dublin Corporation were considered, and the Hon. Secretary was instructed to communicate with the City Treasurer about several points therein.

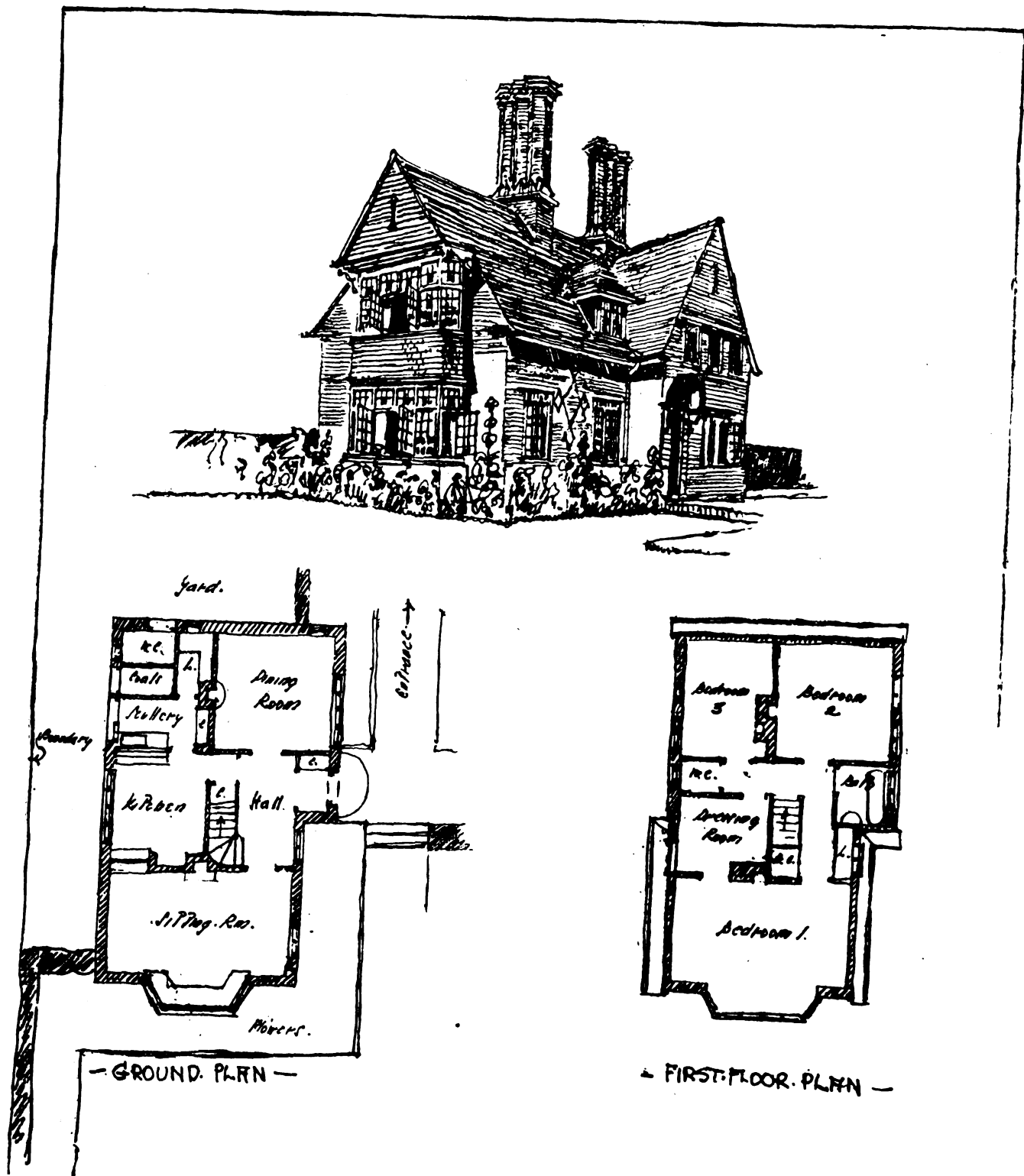
KING'S COLLEGE HOSPITAL FOR SALE.—In 1839 King's College Hospital was established on the west side of Carey Street, W., in a building which was formerly the district workhouse. The re-arrangement of the structure was carried out according to the plans of Sir Robert Smirke at a cost of £25,000. Ten years later these premises were supplanted by new and larger ones costing £50,000 from the designs of Mr. T. Bellamy. The hospital was then situated in one of the worst localities in London. During the past sixty years the neighbourhood has been transformed to such an extent that the hospital almost lost its *raison d'être*—the ministering to the surrounding poor. King's College Hospital has, therefore, been removed to crowded South London. The freehold site of the old hospital, over an acre in extent, and the existing buildings are offered for sale or to be let on a building lease, or alternatively an offer is invited for the retention of the existing buildings subject to alterations to meet modern needs. Tenders are to be given by December 18 this year to Messrs. Weatherall & Green, the hospital surveyors. Vacant possession will be given at the end of next year.

A NEW gas mantle has just been placed on the market which will undoubtedly create considerable interest among all users of gas appliances for lighting purposes by reason of the fact that it has been made flexible by a special process invented by Mr. J. I. Robin, from whom it derives its name—"The Robinlyte." The mantle is made of flexible threads, and may be knocked or folded without the slightest injury resulting. Users of the "Robinlyte" mantle are assured of a steady even light, and it is claimed that there is a saving of gas and increased lighting-power as compared with the ordinary mantle. The inventor also claims that the "Robinlyte" gives perfect combustion, obviating the hissing or roaring common with some mantles. The price compares very favourably with other makes, for it can be retailed at 3d., a price rendered possible by the simplicity of the manufacturing process also invented by Mr. Robin, and patented by him all over the world.

WEEK-END COTTAGES, BUNGALOWS, AND OTHER SMALL HOUSES.

DESIGN NO. 59.

A VARIED selection of designs differing both in treatment and cost is included in our Supplement this month, and the Editor will be pleased to introduce the authors to those who desire the services of the architect whose sketch, illustrated by us, shows the sort of house they require.

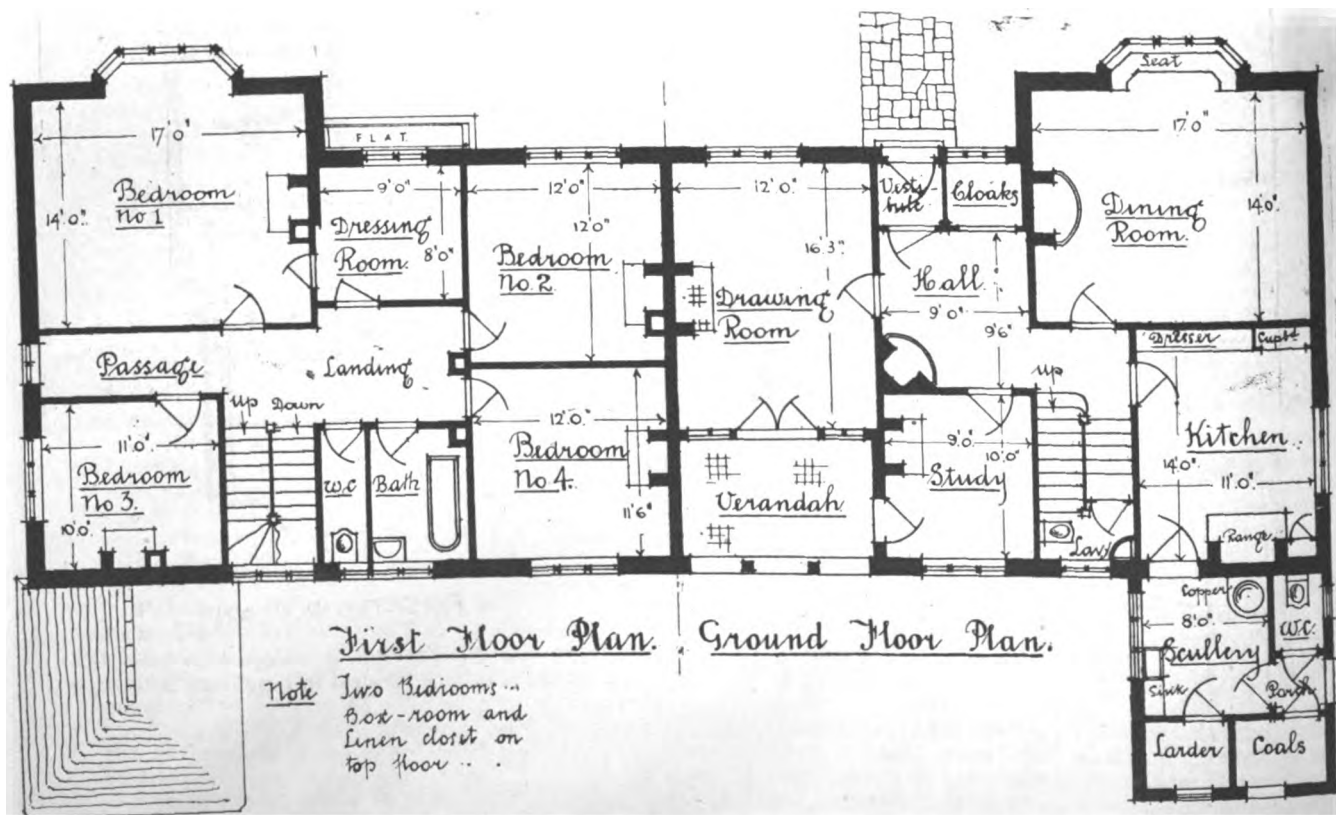


This little cottage with two sitting-rooms, three bedrooms and a dressing-room, is intended to be built with brick walls and tile roof, and would cost £575.

DESIGN NO. 60.

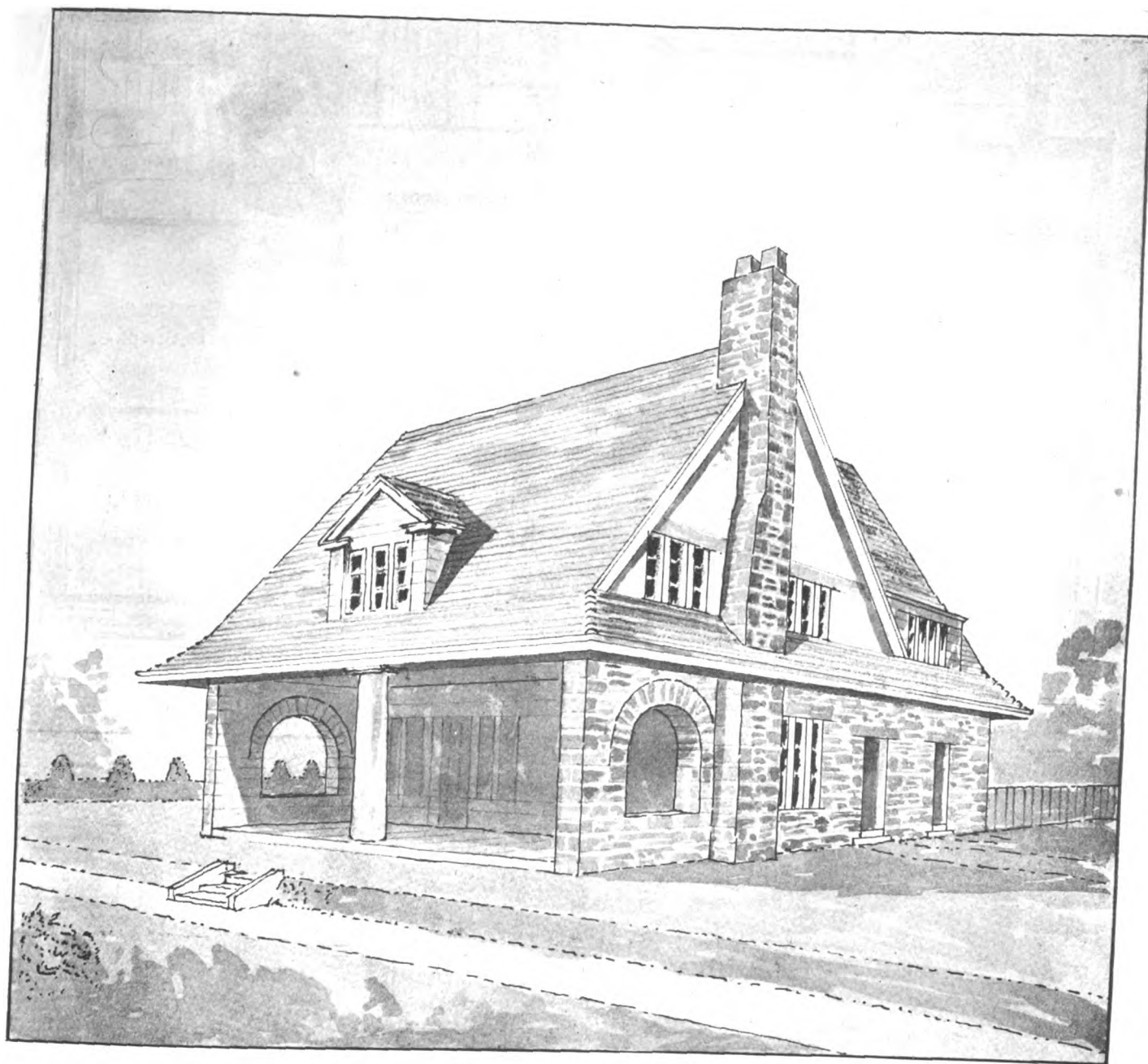


ENTRANCE FRONT.



Two semi-detached residences suitable for suburban dwellings form the subject of this design. The accommodation provided includes large dining-room with drawing-room, study, &c., on ground floor, whilst five bedrooms and a dressing-room are provided on the upper floors. The building is intended to be carried out in purple facing bricks to the lower part with rough-cast above and red square tiles as a roof covering. The doors and window frames would be painted green and the latter glazed with leaded glass. Together the two houses would cost approximately £2,000.

DESIGN NO. 61.

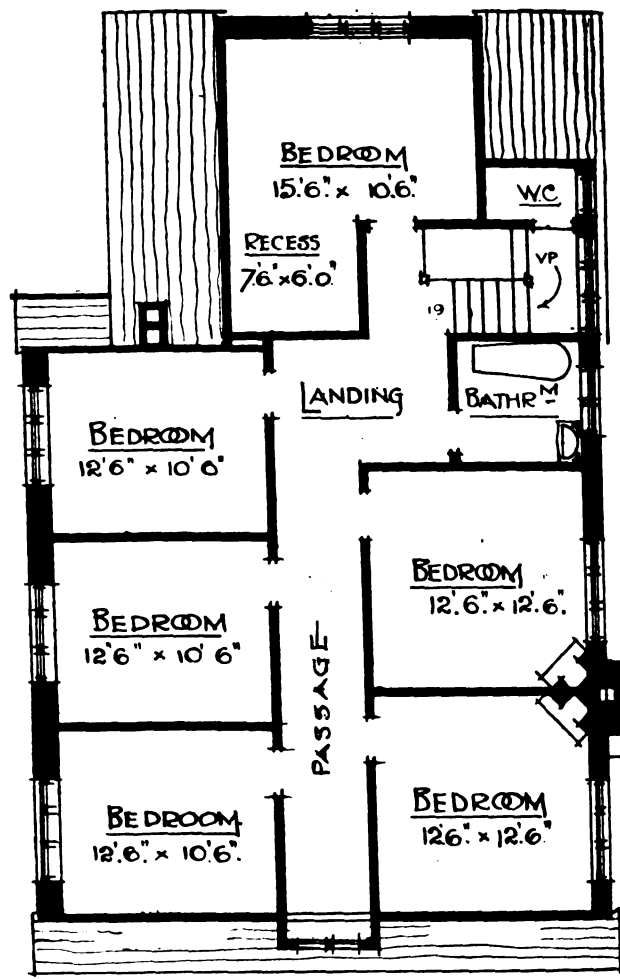
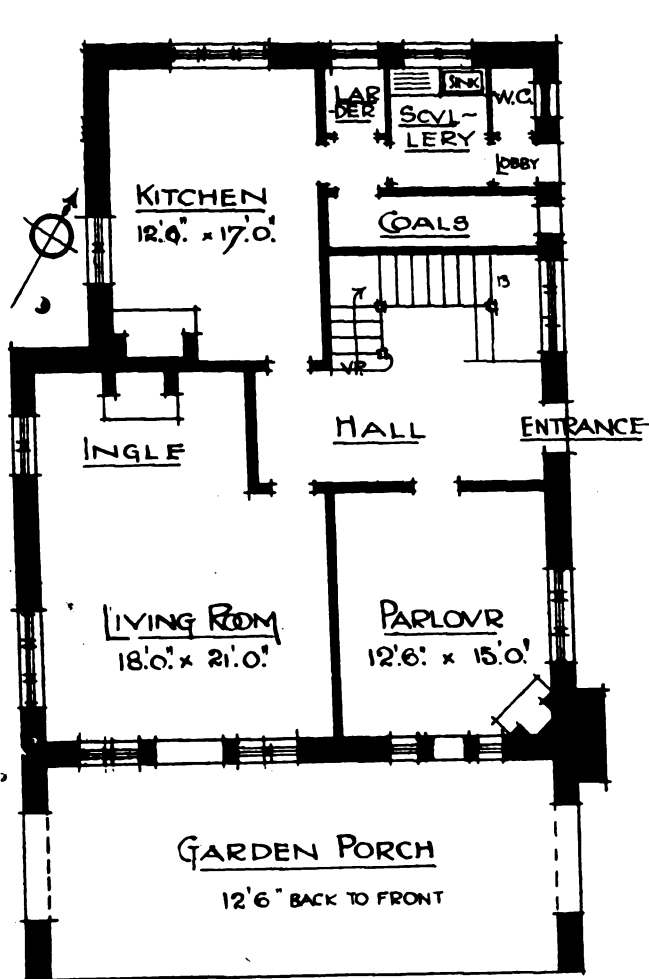


VIEW FROM GARDEN.

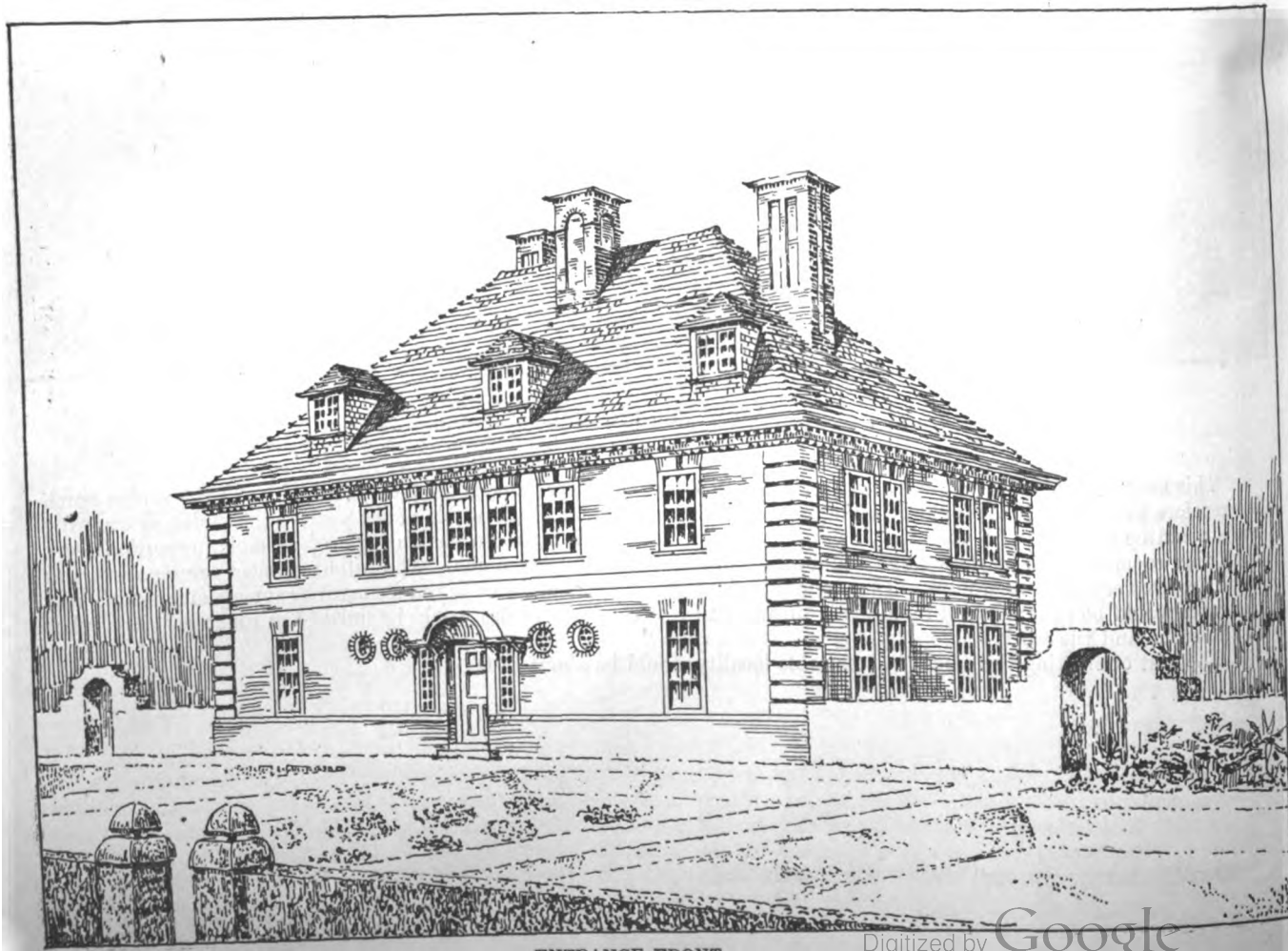
This house is intended for a week-end residence in a district where stone is the local material. A large garden porch is therefore provided which would be a pleasant sitting place for almost the whole of the year, as the arches in the wing walls could be shielded with curtains when necessary. The large living-room has an angle of sensible proportions, and both this room and the parlour have windows opening into the garden porch. The kitchen offices are compact and there are six very good bedrooms. The stone for which the house is designed is red Pennant or some similar stone, and the roofs would be covered with hand-made brindled tiles. The large gables would be finished in rough-cast as a relief to the stone and tile work.

The cost of erecting this house in a suitable locality would be about £1,000.

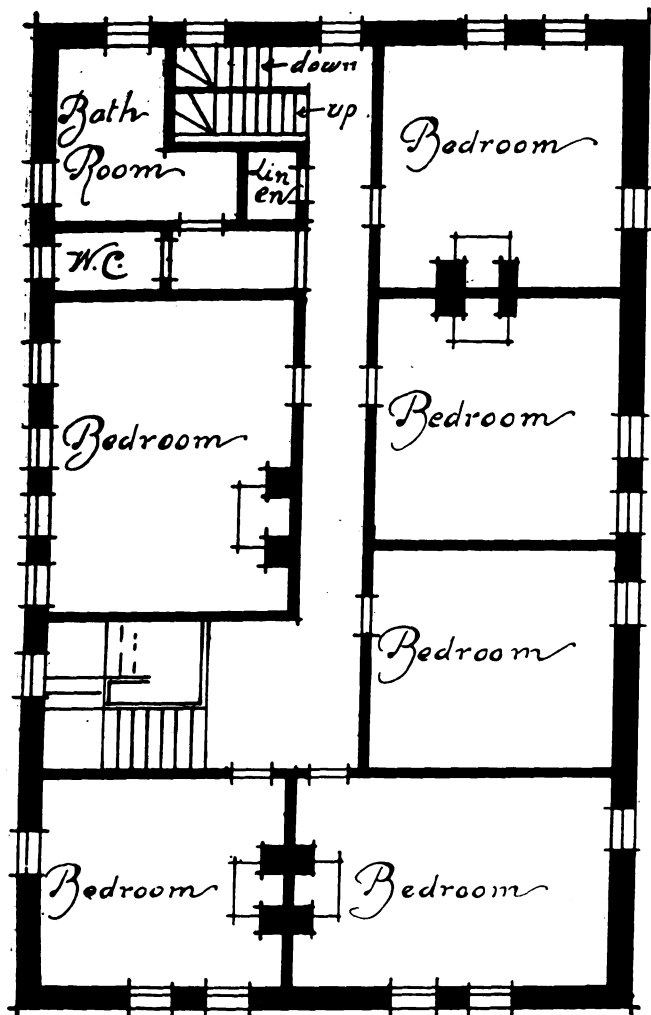
DESIGN NO. 61—continued.



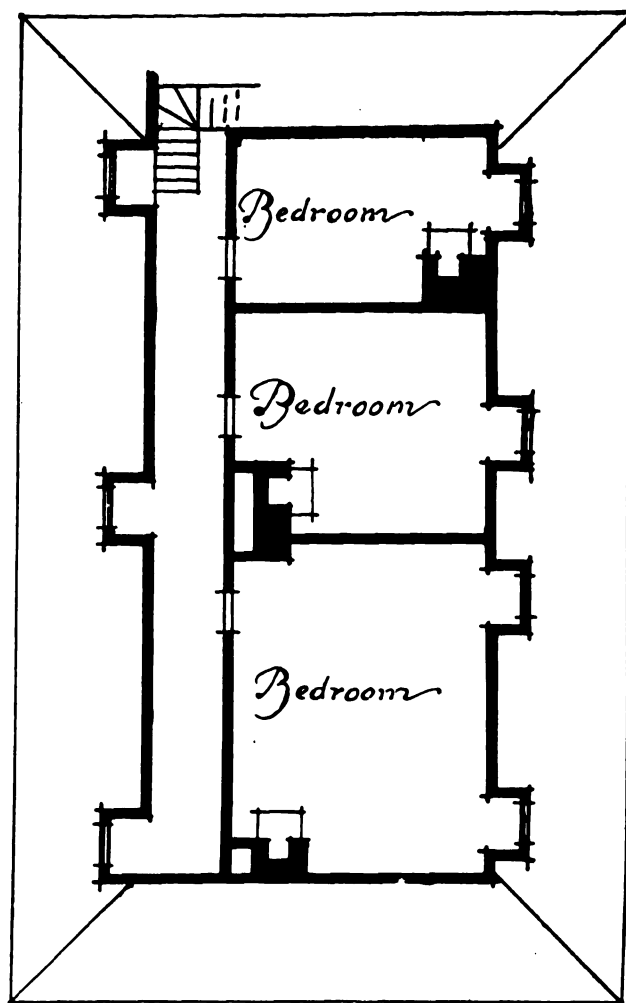
DESIGN NO. 62.



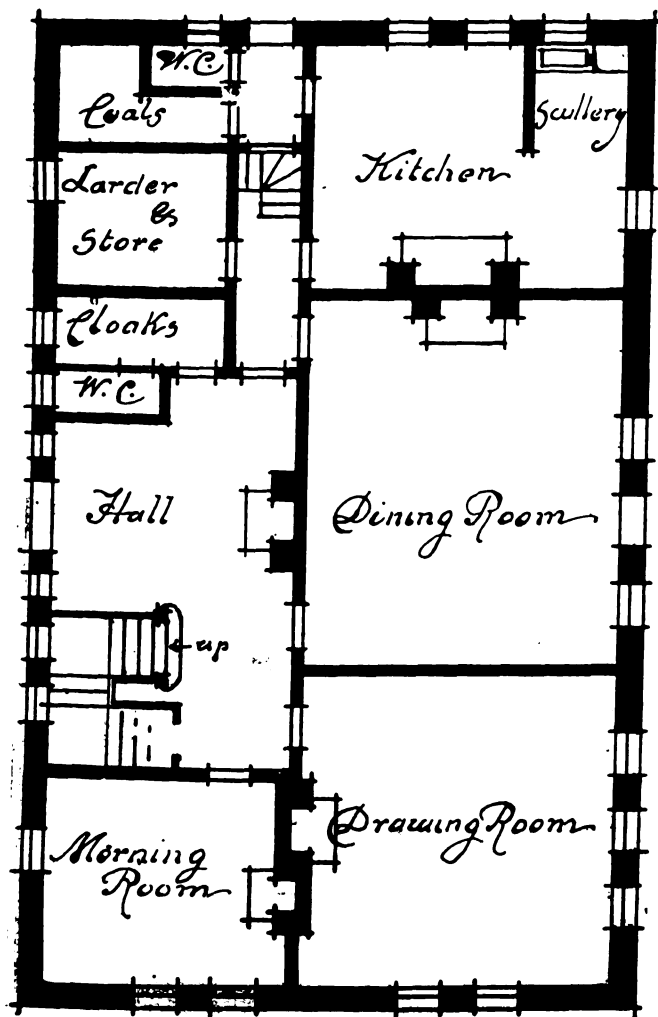
DESIGN NO. 62—continued.



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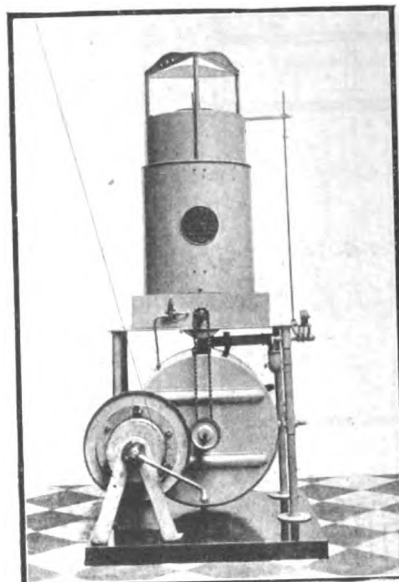
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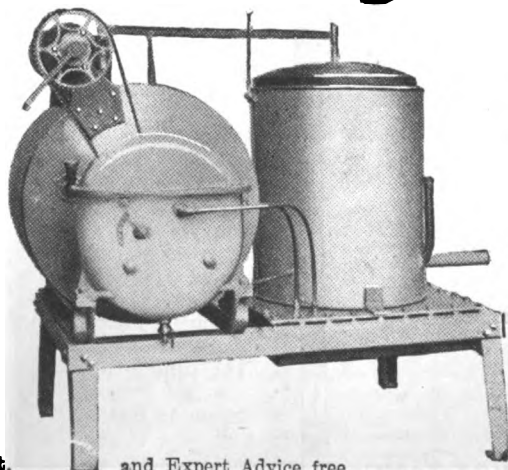
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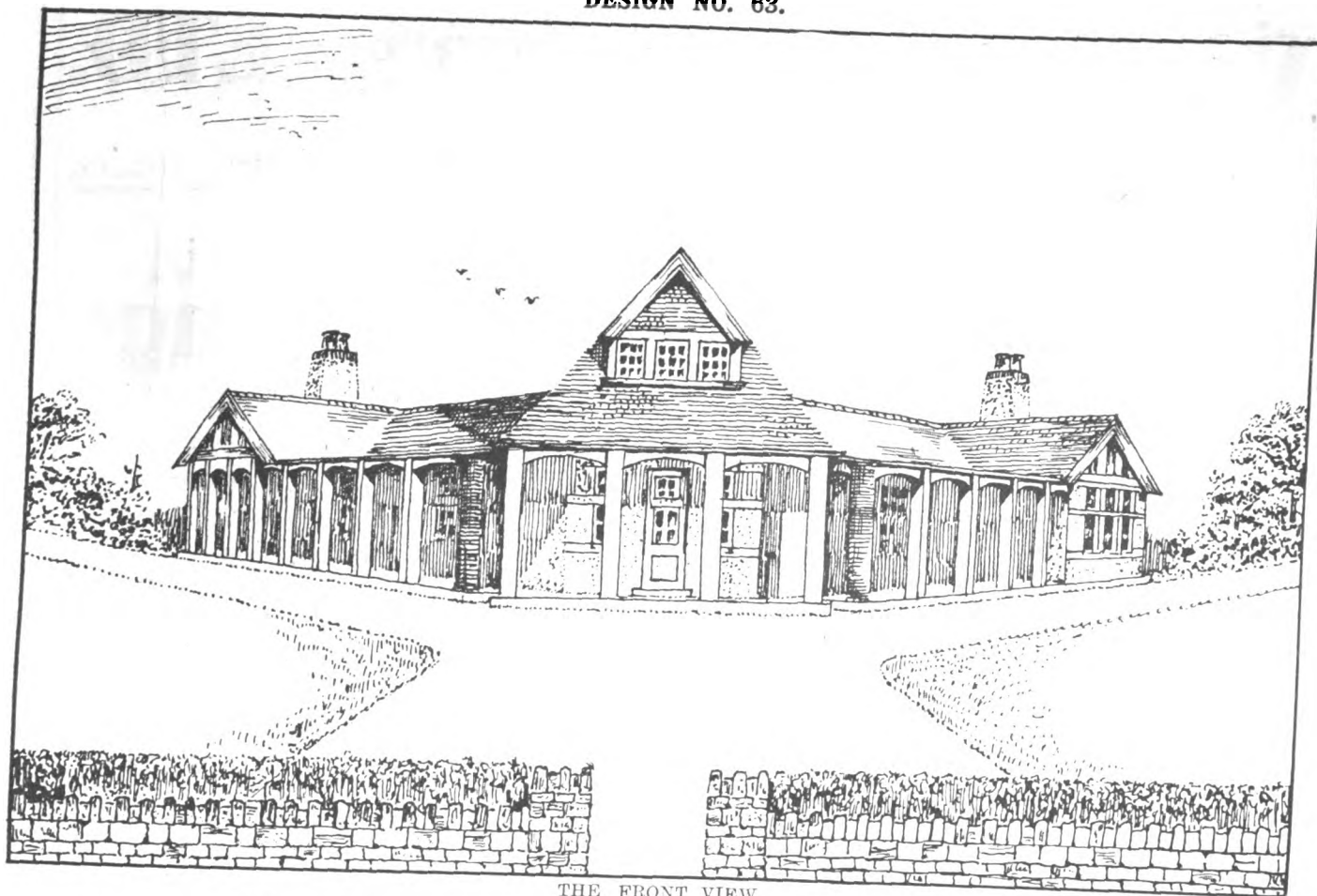
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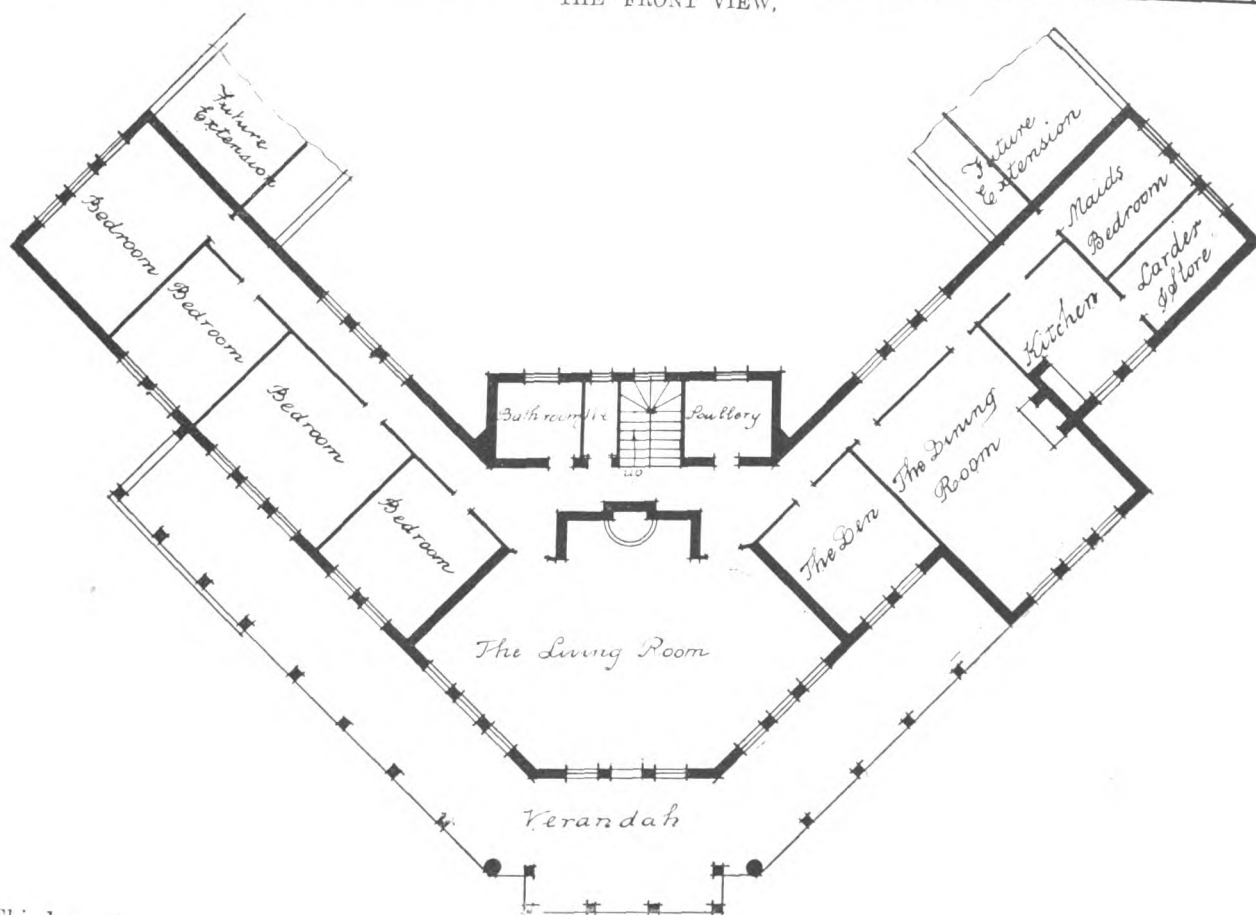
Telegrams: "Beaflight, London."

Telephone: 2215 Victoria.

DESIGN NO. 63.



THE FRONT VIEW,



This bungalow is intended for a residence near the sea. Its disposition is arranged so that whilst its living-room faces due south, the dining-room, den and the bedrooms would not be exposed to the full glare of the sun, but still would receive sunshine at some period of the day.

Four bedrooms besides the maids' bedroom are shown on the plan, but others could readily be added at a small extra cost. A "gazebo" is arranged in the roof over the living-room.

Fireplaces are provided for the living-room and dining-room only besides the kitchen range, but a moderate amount of warmth could be obtained from these by means of hot-water pipes and radiators leading to the other rooms if desired.

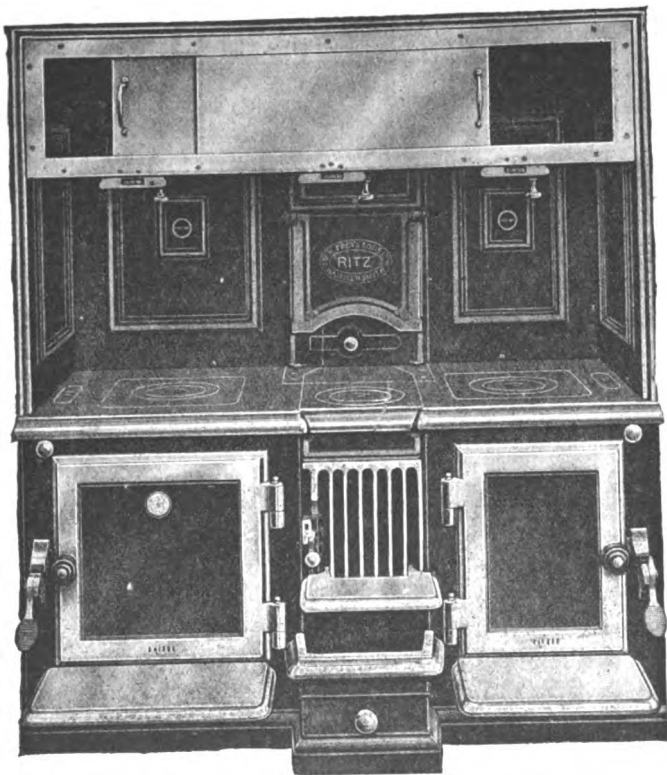
The house being intended for a summer residence, it is not necessary for all the bedrooms to be provided with fireplaces. They would have ample ventilation without and would not require artificial heating. The ample verandah would provide for living outdoors in either rainy or very hot weather.

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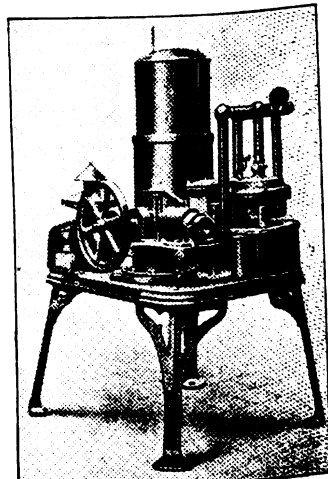
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THE Architect and Contract Reporter.

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Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

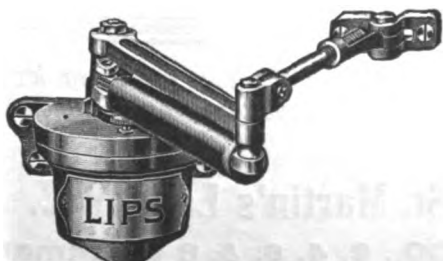
BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie-Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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AGENTS IN CAPE TOWN:—Messrs. D. M. MURRAY & CO., 2, 4, 6, & 8 Greenmarket Square. Importing Agents. Stocks kept.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

SHEFFIELD.—Nov. 23.—The Guardians of Ecclesall Bierlow Union invite plans for a temporary hospital to be erected at the workhouse to accommodate twenty-four beds, with administrative quarters, dayroom, &c. The ordinary rate of commission will be paid in respect of the plan which is accepted, and no financial liability will be undertaken for rejected plans. Mr. J. E. Moulding, clerk, Union Offices, The Edge, Sheffield.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

CONTRACTS OPEN.

ALBURY.—Nov. 6.—For building six cottages at Albury, Herts., for the Hadham Rural District Council. Mr. E. T. Watts, surveyor, London Road, Bishop's Stortford.

BAILDON.—Nov. 5.—For the various works required in the erection of a detached house at Tong Park. Send names by Nov. 5 to Messrs. S. Jackson & Son, architects, 11 Tanfield Chambers, Bradford.

BIRMINGHAM.—Nov. 11.—For the erection of stabling, &c., at the destructor works, Neshells, and also stabling, foreman's house, loose boxes, smithy &c., at the destructor works, Lifford Lane, King's Norton, for the Refuse Disposal Sub-Committee. Deposit £1 for each contract. Mr. W. E. Ballard, A.M.I.C.E., District Office of the Department, Council House, Sparkhill.

BLACKBURN.—For erection of a bakery in Crossfield Street, for the Grimshaw Park Co-operative Society, Ltd. Send applications and £1 1s. deposit to Mr. F. E. L. Harris, architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

BRIDLINGTON.—Nov. 12.—For erection of a villa residence on the Belvedere Cliff Parade. Send applications by Nov. 4 to Messrs. W. S. Walker, F.R.I.B.A. & Son, architects and surveyors, 77 Lowgate, Hull.

CAMBRIDGE.—Nov. 11.—For erection of cottages in Stanley Road, for the Town Council. The Borough Engineer and Surveyor, Guildhall, Cambridge.

CHARTHAM.—Nov. 15.—For the erection of a store at the Kent County Asylum at Chartham, near Canterbury. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury.

CHORLEY WOOD.—Nov. 25.—For the erection and completion of a County Council School. Deposit £2 2s. Mr. Urban A. Smith, county surveyor, Hatfield, Herts.

CLEETHORPES.—Nov. 4.—For erection of a Council School at Cleethorpes, Lincs., for the Lindsey County Council Education Committee. Send applications and £2 2s. deposit to Messrs. Scorer & Gamble, architects, Bank Street Chambers, Lincoln.

CLEETHORPES.—Nov. 11.—For erection of a bandstand at the end of Kingsway and two shelters in the bastions of the Parade. Mr. C. H. Waithman, A.M.I.C.E., engineer and surveyor, Council House, Cleethorpes, Lincs.

EASINGTON.—Nov. 12.—For erection of new piggeries, stables, trolley shed, earth closet, &c., at the workhouse. Mr. J. M. Longden, clerk, Union Offices, Easington, Castle Eden.

EASTBOURNE.—Nov. 14.—For the construction of a coal bunker retaining-wall in either brickwork or reinforced concrete at the electricity works, for the Electricity and Street Lighting Committee. The Borough Electrical Engineer, Electricity Works, Eastbourne.

EXETER.—Nov. 7.—For additions and alterations to the Royal West of England Institution for the Deaf and Dumb. Mr. J. Jerman, F.R.I.B.A., architect, 1 Bedford Circus, Exeter.

GOOLE.—Nov. 9.—For additions and alterations to the workhouse hospital and other buildings. Messrs. Thorpe & Turner, architects, Carlisle Street, Goole.

GRAVESEND.—Nov. 6.—For erection of an additional building to the vagrant wards at the workhouse, for the Guardians of Gravesend and Milton Union. Mr. E. J. Bennett, A.R.I.B.A., architect, 191 Parrock Street, Gravesend.

GREETLAND.—Nov. 11.—For the plumbers' and plasterers' work in certain general repairs at the West Vale Council School, Greetland, for the West Riding County Council. Mr. F. Parker, Education Offices, Elland, Yorks.

HIGHER BEBINGTON (CHESHIRE).—Nov. 21.—For elementary school at Higher Bebington (accommodation 400), for the Administrative Sub-Committee for Education for Bebington and Neston area. Deposit £1 1s. Mr. H. Grayson, F.R.I.B.A., M.A., architect, Royal Liver Building (sixth floor), Liverpool.

HOLMFIRTH.—Nov. 8.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with alterations to Holmfirth Hinchliffe Mill Council School—viz.: Builder, joiner, slater, plumber, plasterer, and painter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

HOYLAND.—Nov. 8.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with additions to Hoyland Elsecar Council School—viz.: Builder, joiner, slater, plumber, plasterer, and painter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

HULL.—Nov. 12.—For erecting dock offices, dock-master's house, and offices for customs surveyor at the Joint Dock, for the Hull Joint Dock Committee. Mr. W. Bell, architect, North-Eastern Railway, York.

IRELAND.—Nov. 11.—For the erection of a masonry market house 100 feet by 40 feet at Ardara, county Donegal, for the Congested Districts Board. Mr. W. Chambers, Woodhill, Ardara, county Donegal.

IRELAND.—Nov. 12.—For erection of a gallery and circular staircase at the National Library, Dublin. Mr. H. Williams, secretary, Office of Public Works, Dublin.

IRELAND.—Nov. 12.—For building and completing a residence, for Mr. W. J. Seymour, at Dunderrow, near Kinsale. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.

LEWES.—Nov. 19.—For the construction of the low-level pumping station and contingent works, for the Corporation. Deposit £3 3s. Messrs. Brierley, Holt & Co. (Arthur Hindle, M.I.C.E., and P. Holt Whitaker, A.M.I.C.E.), engineers, 46 Abingdon Street, Blackpool.

LONDON.—Nov. 6.—For demolishing 155 and 157 Peckham Rye, Peckham, S.E., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, Office of the Board, Embankment, E.C.

LONDON.—Nov. 21.—For erection of a branch library building in Northwold Road, Upper Clapton, N.E., for the Hackney Borough Council. (Mr. E. Cooper, F.R.I.B.A., 4 Verulam Buildings, Gray's Inn, W.C.) Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney, N.E.

MARGATE.—Nov. 11.—For execution of certain repairs to the water tower at Woodlands, near Wingham, for the Corporation. The Borough Engineer, 13 Grosvenor Place, Margate.

NORWICH.—Nov. 22.—For erection of a shelter at the cemetery in place of the one recently destroyed by fire, for the Burial Board. Mr. A. E. Collins, M.I.C.E., city engineer, Guildhall, Norwich.

PLAISTOW (SUSSEX).—Nov. 16.—For alterations and additions to the "Bush Inn," for Messrs. King & Barnes, Ltd. Mr. C. H. Burstow, architect, King's Road, Horsham.

PORTSMOUTH.—Nov. 19.—For erection, completion and maintaining in repair for six months the following works, for the Corporation—viz.: (1) a block of ferro-concrete (Hennebique) stores and offices on the Camber Quay, Portsmouth (deposit £3 3s.); and (2) a boatswain's office, meters' office, labourers' room, and gentlemen's convenience at Flat-house Wharf (deposit £2 2s.), all in the borough of Portsmouth. The Borough Engineer's Offices, Town Hall, Portsmouth.

RICHMOND.—Nov. 11.—For extensions to the public baths, Parkshot, for the Town Council. Deposit £1 1s. Mr. J. H. Brierley, borough surveyor, Town Hall, Richmond, Surrey.

RUGBY.—Nov. 14.—For erection of a discharge block at their infectious diseases hospital, Harborough Magna, for the Rugby Joint Hospital Board. Mr. T. W. Willard, architect, Market Place, Rugby.

ST. AUSTELL.—Nov. 9.—For erection of a new assembly hall, kitchen, &c., and making certain alterations at the St. Austell County School, for the Cornwall Education Committee. Mr. B. C. Andrew, architect, Biddick's Court, St. Austell.

SCOTLAND.—Nov. 6.—For the reinforced concrete piling and foundation work for extension of generating station at Carolina Port, Dundee, for the Town Council. The Head Office of the Department, Dudhope Crescent Road, Dundee.

SCOTLAND.—Nov. 7.—For the mason, carpenter, slater, and plasterer's work of a dwelling-house, &c., to be erected at Waterside Road, Methlick, for Mr. R. Benzie. Mr. J. Cobban, architect, Haddo House.

SHEFFIELD.—Nov. 7. For works of all trades required in alteration and extension of the technical school of art, Arundel Lane. The City Architect, Town Hall, Sheffield.

SLOUGH.—Nov. 6.—For provision and erection of buildings, furnaces, boilers and chimney, &c., at the pumping station at Chalvey, for the Slough Urban District Council. Deposits in cash as follows:—(Contract A), £2 (buildings), (B), £3 (furnaces, &c.). The Town Surveyor's Office, William Street, Slough.

STOCKPORT.—Nov. 12.—For the labour and materials required in erection of a shelter, bowl-house, and tennis pavilion at Alexandra Park. Mr. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

STOURBRIDGE.—Nov. 4.—For sheeting the roof of a barn at the Board's Whittingham Hall Farm with galvanised corrugated sheets, and for other work in connection therewith, for the Upper Stour Valley Main Sewerage Board. Mr. W. Fiddian, engineer and surveyor, Old Bank Offices, Stourbridge.

SWINDON.—Nov. 5.—For alterations and additions to Olive House, for the Guardians of Swindon and Highworth Union. Mr. R. J. Beswick, M.S.A., Swindon.

THORNTON-LE-FEN.—Nov. 21.—For alterations to the Council School at Thornton-le-Fen, for the Lindsey County Council Education Committee. Send applications and £1 1s. deposit by Nov. 8 to Mr. S. M. Grant, secretary, 286 High Street, Lincoln.

WALES.—Nov. 5.—For erection of additional offices at the workhouse, Tredegar, for the Guardians of Bedwelty Union. Deposit £1 1s. Messrs. James & Morgan, F.F.R.I.B.A., Charles Street Chambers, Cardiff.

WALES.—Nov. 9.—For the following works at Cog Barn, Sully, near T.V.R. Station, for the Glamorgan County Council: (a) two detached cottages and four pair semi-detached cottages; (b) an accommodation road. Rate of wages, &c., clause to be observed. The Glamorgan County Hall, Cardiff, and at the Police Station, Cadoxton.

WALES.—Nov. 16.—For erection of thirty houses and the construction of roads and drains, for the Coronation Building Club, Mardy. Mr. E. Rees, architect and surveyor, Alexandra Chambers, Taff Street, Pontypridd.

WALES.—Nov. 16.—For the provision of terrazzo flooring at Cardiff workhouse, for the Guardians of Cardiff Union. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

WALES.—Nov. 19.—For the supply of steel girders and other steel and iron work for an engine shed, &c., at Maesglas, Newport, and also for the erection of such shed—to be let in two contracts—for the Great Western Railway Co. The Engineer, Paddington Station, London.

WALES.—Nov. 20.—For erection of a vestry at the Baptist Church, Gowerton. Mr. J. Williams, Church Street, Gowerton, Glamorgan.

WANSTEAD.—Nov. 7.—For erection of a fire brigade station in Wanstead Place, at the corner of Fitzgerald Road. Deposit £1. Mr. C. H. Brassey, F.S.I. surveyor, Council Offices, Wanstead, N.E.

WESTONING.—Nov. 14.—For erection of a elementary school at Westoning, for the Bedfordshire County Council. Send £1 1s. deposit by Nov. 2 to Messrs. Gotch & Saunders, architects, Kettering.

WHITEHAVEN.—Nov. 13.—For erection of printing works, for Messrs. Smith Bros., Ltd. Mr. A. Huddart, architect, 9 Lowther Street, Whitehaven.

WINCHESTER.—Nov. 6.—For certain alterations and additions to "The Soldiers' Home," Hyde Close, for new headquarters, for the Hants Territorial Force. Mr. B. D. Cancellor, architect, 12 Jewry Street, Winchester.

WOOLWICH.—Nov. 13.—For erection of sanitary conveniences for both sexes upon a site situate in the Royal Victoria Gardens, and fronting High Street, North Woolwich. Deposit £1 1s. Mr. J. Rush Dixon, M.I.C.E., borough engineer, Town Hall, Woolwich.

YORK.—Nov. 12.—For erection of thirty cottages in Alma Terrace, Fulford Road, for the Corporation. Deposit £2 2s. Mr. F. W. Spurr, city engineer, Guildhall, York.

TENDERS.

CARLTON.

For pulling down existing property and the erection of four cottages in Station Road, for the Urban District Council. Mr. J. CRACROFT HALLER, C.E., engineer and surveyor, Carlton, Notts.

Betts	£935	0	0
Powell & Son	896	0	0
Maule & Co.	850	0	0
Harper	840	0	0
Quinn	830	0	0
Lewrie	828	0	0
J. & G. Roulson	810	0	0
Tuck	800	0	0
G. T. TEGERDINE, Carlton (accepted)	799	0	0

HALIFAX.

For proposed erection of new chancel, etc., at the Church of St. Bernard, for the Rev. Father Bradley. Mr. W. H. H. MARTEN, L.R.I.B.A., Leeds, architect.

Accepted Tenders.

N. Culpan & Son (Masons), King Cross Lane, Halifax	408	0	0
Saml. Hirst (Joiner), 34 Haley Hill, Halifax	160	0	0
C. Firth (Plumber), 11 New Bank, Halifax	74	3	0
J. Bancroft & Son (Slaters), Winding Road, Halifax	53	12	8
J. Bancroft & Son (Plasterers), Winding Road, Halifax	44	17	3

IRELAND.

For erection of the following dwellings: (1) Forty-four three-room houses, in three blocks; (2) twenty two-room houses, in two blocks; (3) one four-room house, together with construction of roads, paths, water mains, sewers, &c., at Bray. Mr. P. H. MCCARTHY, B.E., architect, 39 Westmorland Street, Dublin.

McKee	£12,663	7	1
McNally	12,187	0	0
Kinlan	11,662	6	11
Bower	11,400	0	0
Barry	10,952	5	11
Heatley	10,744	0	0
Frazer	10,036	0	0
L. Monks, Kingstown	9,667	10	4
L. MONKS, Kingstown, amended (accepted)	9,307	0	4

LONDON.

For heating-work at Mantua Street school, Battersea, for the London County Council.

Wright Bros.	£1,395	0	0
Palowkar & Sons	1,170	0	0
Brightside Foundry and Engineering Co.	1,083	0	0
Boyd & Sons	1,068	0	0
Davis	1,025	0	0
Cannon & Sons	980	0	0
G. & E. Bradley	915	0	0
J. Grundy, Ltd.	897	0	0
J. & F. May	895	0	0
Christie	889	0	0
YETTON & CO., LTD., Limehouse (accepted)	885	0	0

For extension of offices, Katherine Street, for the Croydon Gas Company. Messrs. BERNEY & SON, architects, Croydon.

Bacon & Son	£16,150	0	0
Gathercole Bros.	15,700	0	0
W. Smith & Sons	15,682	0	0
Everitt & Sons	15,594	0	0
Akers & Co.	15,349	0	0
Cropley Bros.	14,783	0	0
J. Smith & Sons, Ltd.	14,740	0	0
Waller	14,640	0	0
Worsfold & Sons	14,489	0	0
Saunders	14,375	0	0
Barker & Sons	13,843	0	0

LONDON—continued.

For enlargement of the Brixton Hill industrial school, for the London County Council.

Structural Work.

Bovis, Ltd.	£1,648	0	0
Hollingsworth	1,632	0	0
Pasterfield & English	1,598	0	0
Downs	1,563	0	0
Holliday & Greenwood	1,530	0	0
Lapthorne & Co.	1,298	0	0
Bailey	999	0	0
Triggs & Co.	979	0	0
Heath & Son	915	0	0
W. V. GOAD, 241 Camberwell Road (accepted)	895	0	0
Bragg & Sons (withdrawn)	792	0	0

Iron Staircase.

Hayward Bros. & Eckstein	£230	0	0
Wilmer & Sons	167	0	0
Peirson & Co.	156	0	0
NORRIS & Co., 11-12 St. Andrew's Hill, Queen Victoria Street, amended (accepted)	139	10	0
Norris & Co., 11-12 St. Andrews's Hill, Queen Victoria Street	124	10	0

For erection of a police station at South Fulham, S.W. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor, New Scotland Yard, S.W.

Harris & Wardrop	£14,423	0	0
Rice & Sons	14,223	0	0
Minter	14,140	0	0
Lorden & Sons	13,987	0	0
Todd & Newman	13,969	0	0
Trollope & Sons	13,900	0	0
Holloway Bros.	13,899	0	0
F. & H. Higgs, Ltd.	13,876	0	0
Willett	13,829	0	0
Prestige & Co.	13,771	0	0
Higgs & Hill	13,744	0	0
Lole & Co.	13,725	0	0
Appleby & Sons	13,653	0	0
Smith & Sons	13,559	0	0
Galbraith Bros.	13,491	0	0
Wallis & Sons	13,390	0	0
Adamson & Son	12,997	0	0
Lawrence & Sons	12,987	0	0
Patman & Fotheringham	12,783	0	0
J. Garlick, Ltd.	12,335	0	0

NORTHAMPTON.

For the erection of (1) drill hall and alterations to the militia stores; (2) riding school, for the Northamptonshire Territorial Force Association. Major J. W. FISHER, architect, Wellingborough.

Souster & Son	£5,619	11	0
Stevens	5,515	0	0
Henson & Son	5,499	0	0
Drever	5,492	0	0
H. Martin, Ltd.	5,450	0	0
Beardmore & West	5,395	0	0
Clarke	5,375	11	0
Brown & Son	5,365	0	0
Cosford	5,333	0	0
Green	5,316	0	0
Higgins	5,299	0	0
Heap	5,234	15	0
Archer & Son	5,224	0	0
Hacksley Bros.	5,145	0	0
Fisher	5,070	0	0
Powell	5,006	0	0
Pullen & Son	4,922	10	0
A. P. HAWTIN, Northampton*	4,839	0	0

*Accepted subject to the approval of the Army Council.

WHITEHAVEN.

For building a boiler-house, for alterations to existing buildings for calorifier-house, &c., and other works connected therewith, at the workhouse, Low Road. Messrs BESWICK & DAVIS, civil engineers and architects, Whitehaven.

Harrison Killip	£1,400	0	0
Moorhouse	1,177	0	0
J. YOUNG, Whitehaven (accepted)	1,124	18	0

SPALDING.

For the erection of thirty-six cottages adjoining the Holbeach Road, for the Urban District Council. Mr. J. B. CORBY, F.S.I., architect, Stamford and Spalding. Quantities by the architect.

E. CLARKE*, Melton Mowbray	£5,176	0	0
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*Accepted subject to approval of the L.G.B.

MODEL SHOWROOMS.

EVERY year witnesses the closer approach of the producer to the consumer. Very often this is done though an intermediary who links the two together by winning the confidence of both parties. The present-day motto in a wholesale business seems to be "Come and See for Yourself." The present is essentially an age of window-dressing and of the show-room. Both features have produced almost a science of their own, in which new developments are constantly being made. We imagine that one of its first laws must be "elimination," by which we mean the sacrifice of many things in order to concentrate on a few. This heroic principle has been admirably borne in mind by Messrs. Falk, Stadelmann & Co., Ltd., London and Glasgow, in the arrangement of their latest electrical show-rooms at 83-87 Farringdon Road, E.C. Here may be noticed the evolution of the science from the time when the chief effort was to cram as many examples into a given space as it would hold to the present day, when each example is separately presented, so to speak, to the possible purchaser.

First comes the old-fashioned show-room, which contained *multum in parvo*; then a more conscious striving after effect by the suggestion of a living-room, with its furniture, fire and windows, until the show-room with all its contents accurately carried out according to some particular Period is reached. Messrs. Falk, Stadelmann & Co. have gone one



step further, for their climax is to reveal to the visitor at the far end of their largest show-room a perspective of meadow and meandering stream bathed in sunlight or moonlight, according to the time of day in Farringdon Road. The firm are so fully alive to the importance of electrical fittings being designed in harmony with the room for which they are intended that they have chosen this elaborate way of suggesting to customers what they are ready to do. The Jacobean Room, for instance, with its massive fittings, bears no likeness to the adjoining elegant Louis Seize salon here illustrated. In reality a large display is made in each room, but it is arranged so cunningly that there is none of the usual impression of bewilderment. Nearly each fitting is wired, in order that the customer can see exactly the effect when the light is switched on instead of having to guess at it. Some of the pendant lamps and electroliers are real works of art. There is something for every purse, as well as for every taste. The firm have carried out their scheme with whole-hearted thoroughness, and the show-rooms will astonish the many people who have never considered the possibilities connected with such fittings. Artistic decoration need no longer be jeopardised by the incongruous character of the wall-brackets, pendants or radiators. It would be advisable for architects to pay these show-rooms a visit, with or without their client, in order to realise what has been done towards the improvement of the general standard of taste in electrical fixtures, and they are invited to call at 83-87 Farringdon Road, E.C.

THE SMOKE NUISANCE.

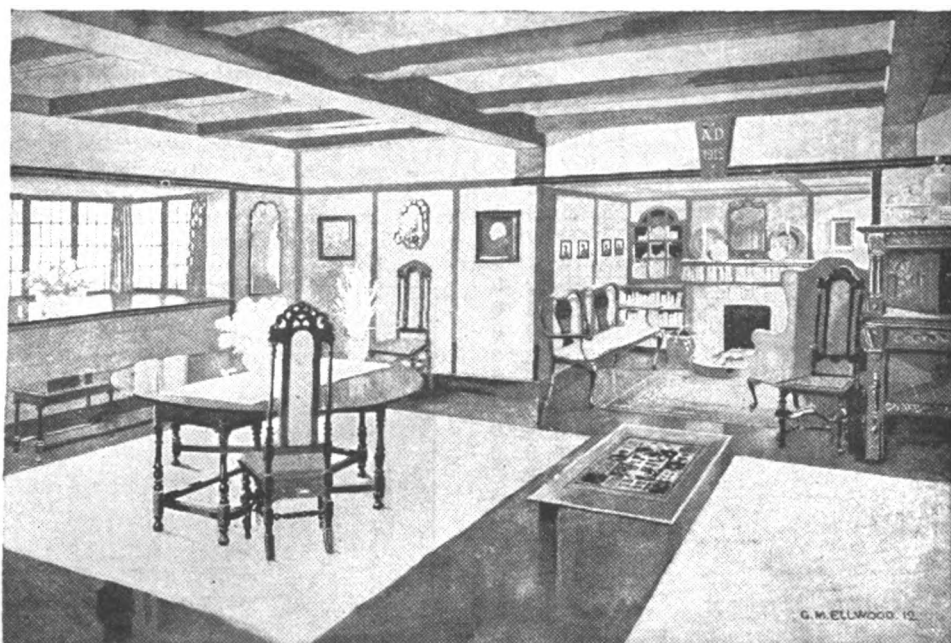
A BULLETIN recently published by the Department of Industrial Research, University of Pittsburg, gives some interesting details of an investigation which is now being carried on in that city into the smoke nuisance. The Director of the Department, Professor R. K. Duncan, has received from a private donor a fund for the purposes of the investigation. At the present moment the inquiry is being conducted by a staff of twenty-five specialists, six of whom are giving their entire attention to the work, while the remaining nineteen have been entrusted with the preparation of special reports concerning particular phases of the subject. Among these are such questions as the effect of smoke upon weather, upon vegetation, the chemistry of smoke and soot, the deterioration of buildings and building materials in smoky atmospheres, smoke and disease, the cost of the smoke nuisance, the question of legal regulation, &c. Under the direction of Professor Duncan the investigation will, no doubt, be extremely thorough, and the results ought to prove of great value. Not the least interesting part of the work will be an attempt to educate public opinion in the matter. It is proposed to make a systematic effort to enlighten civic and business organisations, and to arouse them to combined

entirely independent of weather conditions. Once Beaver Board is erected it is said never to need repairing or replacing. In the words of the booklet, "It lasts as long as the building itself."

Beaver Board is a pure wood-fibre wall-board, cream-white in colour, and has a matt or pebbled surface admirably adapted to artistic decoration. It is manufactured entirely from selected woods, reduced to fibrous form, and pressed into panels with a uniform thickness of about three-sixteenths of an inch. The panels are procurable in sizes which will meet all ordinary requirements, and they can easily be bent to cover an arch or cove ceiling. Beaver Board is just nailed up in panels and then painted or distempered, the joints being covered over with strips of wood which are either polished, stained, or painted, according to the result desired. The method of application is simple, yet the variety and beauty of the results possible are surprising.

In a new building not a square yard of lath and plaster is necessary. Beaver Board may take the place of both, and can be applied directly to ordinary studding and ceiling joists or over brick walls. It may be used for every room in the home, from cellar to attic, as well as for the walls and ceilings of shops, offices, hotels, restaurants, schools, factories, sanatoria, auditoriums, churches, bungalows, &c.

In an old building where the plaster is cracked or break-



A TYPICAL TREATMENT WITH BEAVER BOARD.

action. A staff of lecturers will be organised to address such organisations in Pittsburg and elsewhere; efforts will be made to secure the co-operation of the public Press, and, finally, the results of the whole inquiry will be published in book form.

"THE HOUSE THAT BEAVER BUILT."

THIS is the title of an interesting and useful booklet which tells about a new substitute for lath and plaster. Beaver Board has made such rapid progress in this country, however, that many of our readers have probably employed it already. The material appears to have such great advantages that it bids fair to revolutionise the present method of finishing walls and ceilings.

Beaver Board makes panelled walls and ceilings possible in every house; it opens out quite an extensive field for artistic decoration. In the booklet above-mentioned there are many illustrations showing the charming effects of these panels. Copies of it may be obtained from the Beaver Board Co., Ltd., 4 Southampton Row, W.C.

Architects and builders know too well that it is practically impossible to produce plaster that will not crack. But it is claimed that Beaver Board neither chips, cracks, nor deteriorates; in fact, the makers say that it actually improves with age. The dirt and litter accompanying the employment of plaster is also obviated. The contractor, moreover, does not have to wait for the plaster to dry, and he is

ing away Beaver Board is excellent. It may be put up without any trouble right over the broken plaster.

Many more interesting facts could be given about this material, but anyone who desires further particulars will do well to write for "The House that Beaver Built."

At the last meeting of the Bradford Corporation Sewage Committee the letting of the tender for the making of the outfall sewer and tunnel from Frizinghall to Esholt was reconsidered, and it was eventually decided to recommend the acceptance of the tender of Messrs. Pethick, Dix & Co., of London, at £113,971. Previously the committee had recommended the Council to accept the tender of Messrs. John Best & Sons, Ltd., of £112,312. Opposition was aroused concerning the acceptance of Messrs. Best's tender, opinion being divided as to whether the amount was £112,312 or £117,891, the difference being accounted for by the omission from the total of a sum which appeared on the attached schedule as the price of the work in connection with the sinking of the shafts. At a meeting of the City Council on Tuesday the Town Clerk read the correspondence between the Sewage Committee and Messrs. Best & Sons in regard to the omission. Messrs. Best stated that it was due to a clerical error, and that rather than forfeit the confidence of the Corporation they were prepared to stand by their original tender of £112,312, and give a written undertaking that they would complete the work of sinking the two shafts free of cost. After a full discussion the Council decided to accept the tender of Messrs. Pethick, Dix & Co.

THE GHENT EXHIBITION BUILDINGS.

THE two railway stations at Ghent are characteristic of the dual strength of the city—medieval beauty and modern industrialism. The old station in the centre of the town is thoroughly in keeping with its surroundings—it has a dignity, spaciousness, and even quietude. To find a restful flower garden in the centre of the station is an unusual delight.

The new station of St. Pierre on the main line (Brussels to the east and Ostend to the west being each less than an hour away) is thoroughly typical of modern progress. The building is an imposing structure, with a big tower to mark the entrance, a frontage extending about a thousand feet, well-planned booking-halls and offices.

From this station the Exhibition buildings stand out in striking dignity. Some are close at hand, others stretch a mile away. The nearer view is that of the dome at the chief entrance, flanked by minarets. Four colossal statues of the classical bull, one of the national emblems of Belgium, guard the doorways. A tour of the vast grounds of 350 acres discloses two features which promise well for the future of Ghent. First, that although the date of opening is six months or more ahead, everything in which the builder is concerned is also months ahead, and the smooth working of the many enterprises is already assured. The next striking point is that the whole business is the collective effort of a community and not of some mammoth contractor or speculative building firm brought in from outside. Ghent is building the Ghent Exhibition. Every firm of any standing appears to have a hand in the business. The promoters have done wisely in thus encouraging the progress all round of their own people. Nor is enterprise confined to the Exhibition grounds. The builder is busy on every hand—on an hotel which will accommodate a thousand guests, fine terraces of private houses, new shops and warehouses, well designed streets and squares.

The 27 acres of industrial palaces which will house the international display are already nearly covered. The British, French, and Belgian palaces are already roofed in. In the opinion of many, the total effect will be finer than the Brussels Exhibition, the setting being so much more spacious, the surroundings so perfect. As the last touches are being given to the roofs, there can be no risk from winter or even autumn gales and storms. The concrete flooring and the special beds for machinery will thus be laid under most favourable conditions, and the decorative finishing touches should be carried on without the customary final rush. The directors encourage the exhibitors to keep up to time by making a concession of 20 per cent. to all stands which are fully ready before the opening day. The position of the British exhibits is exceptionally good, as the entire stream of visitors will pass the main front, and the throng to and from the horticultural shows will pass another. Still another front looks on to the executive bureau.

The central courts are distinguished by a well-planned lake, as in the White City, but their most striking feature is the classic marble fountain across the full sweep of the central avenue. The central courts are not only outlined by avenues of trees already flourishing, but are bordered by spacious colonnades. The absence of such shelter has been a serious defect in many exhibitions, the glare from pavements, white walls and glass roofs being a severe tax on the endurance of the sight-seer.

The greatest pleasure in this respect will be found in the sylvan setting of the Horticultural Palace. This being a permanent structure, will be a valuable acquisition to Ghent. The span of the roof is one-third wider than the Crystal Palace. The building is in the form of a vast cross, the long stem of which represents the horticultural show proper, and the broad transverse section, when fitted for seating at right angles, forms a magnificent theatre or concert-hall. Facing the entrance halls are vast hothouses. All these structures are already being roofed in, and it may be noted that roof and pillars are all fitted in revolving sockets, so as to allow movement and avoid fracture. The restaurants, each of which cover about three acres, possess central dining halls capable of seating a thousand or more, and are on the lines of another great Belgian enterprise—the Heliopolis Hotel, near Cairo. These are surrounded by half a dozen or more other dining halls.

Surrounding the Horticultural Palace will be a spacious promenade, built over the remains of the Old Citadel, erected a century ago by our Duke of Wellington, when Ghent was one of a chain of forts on the Belgian frontier

against Napoleon. Those who wisely plan their holidays far ahead and enjoy them all the more in anticipation will do well to ask the London Offices of the Ghent Exhibition at 1 Southampton Row, W.C., to send them from time to time the programmes of the Exhibition as published, so that they may be kept posted up as to excursion arrangements, tours, &c.

INTERNATIONAL BUILDING EXHIBITION, LEIPZIG, 1913.

THE closing date for applications by intending exhibitors at the "International Building Exhibition, Leipzig, 1913," has been extended from October 1, 1912, to January 1, 1913. Thus firms who intended to participate, but who hitherto have omitted to send in their application, still have an opportunity of securing the space they require.

How very much the general building-trade industry is interested in the forthcoming scheme may be judged from the fact that space has already been booked to the amount of a million marks.

The *Deutscher Reichsanzeiger* (Berlin) of October 14 publishes a notice whereby the law of March 18, 1904, for the temporary protection of patents, designs, and trade marks will be put in force in connection with the International Architectural Exhibition and Special Exhibitions to be held in Leipzig from May to October in 1913. Some particulars of the exhibitions were given in our issue of May 24.

MR. T. H. MAWSON, Hon. A.R.I.B.A., has recently visited Vancouver in connection with the scheme prepared by his firm for beautifying that city.

MR. A. E. MURRAY, R.H.A., F.R.I.B.A., has been elected honorary Professor of Architecture by the Royal Hibernian Academy of Arts.

THE laying-out of a garden suburb at Canniesburn, near Glasgow, on co-partnership principles will shortly be commenced. A ground plan for developing the whole estate has been prepared by Mr. Raymond Unwin. The allocation of ground space allows for twelve houses to the acre. Each house will be provided with plots of 30 feet in front and 50 feet at the rear. The architect for the houses about to be erected is Mr. John A. W. Grant, of Glasgow.

AT the last meeting of the Anglesey Education Authority it was reported that Mr. J. D. Prichard, Bethesda, whose tender for erecting the proposed Council School at Menai Bridge at a cost of £4,310 had been accepted, had refused the contract; that Mr. Geo. F. Williams, Carnarvon, whose tender was £4,323, was not prepared to accept the contract, and that the Building Committee had consequently let the contract to Messrs. R. & J. Williams, Bangor, at £4,731, this being 3 per cent. above their original tender. The action was approved.

ON Friday last, the 25th ultimo, a reception was held at the offices and showrooms of the Art Metal Construction Co., Ltd., who occupy considerable space in the new premises of Roneo, Ltd., which now form a striking landmark in Holborn. Until quite recently this Company was carried on as a department of Roneo, Ltd., but the rapid extension of their business made it advisable that an independent company be formed, although closely allied to Roneo, Ltd., with separate works at Thames Road, Silvertown, E., where are manufactured steel doors, architraves and partitions, library equipment and book stacks, filing cabinets, roll-top desks, counters, &c. The new offices and showrooms afford an exceptional opportunity for inspecting these various steel fittings, as they have been used both for equipping them and for reducing the risk of fire to a minimum by their fire-resisting qualities. Attention was at once claimed by a replica of a section of the book stacks recently erected in the Government Record Rooms at Poona, and carried three storeys high. Constructed in skeleton steel framing, the corridors are laid with inch glass slabs to give light to the floor below, and in all the details careful attention to make them both fireproof and hygienic is apparent. Photographs of similar installations at Mareschal College, Aberdeen, Edinburgh University, St. Andrew's Library, &c., were displayed. Specimens of their steel fireproof doors, as passed by the British Fire-Prevention Committee, were shown side by side with steel partitions as fitted to the s.s. *Carmania*, and which are similar in construction to those used in buildings; also steel shelving, lock-ups (ventilated when intended to hold clothes), counters, cashiers' desks, roll-top desks, filing cabinets suitable for public buildings, banks, or business offices.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list.)

ENGLAND.

CHESHIRE

Congleton.—Picture Palace, Mill Street.

CORNWALL

Cambourne.—House, Adelaide Street, for Mr. H. Harris.

CUMBERLAND

Cockermouth.—Nursing Home (£1,200).

Penrith.—Council School.

Secondary school, Skirsgill Road.

DERBYSHIRE

Bolsover.—Parish Church Hall (£1,000).

Mamhead (near).—House, &c., Larkbeare. Messrs. E. H. Harbottle (F.R.I.B.A.) & Son (of Exeter), architects.

DEVON

Exeter.—Messrs. Veale & Co.'s Factory, Bartholomew Street: re-fronting. Mr. J. Crocker, F.R.I.B.A., architect.

Newton Abbot.—Seven houses, Fairfield Estate, for Mr. F. J. Zealley.

Motor garage, back of Abbotsbury Road, for Mr. J. Barter.

Motor garage, at Elm Croft, for Mr. W. W. Wilkinson.

"Empire": alterations for Messrs. Poole.

"Wenwell": additions for Dr. Mapleton.

Additions to Newton Gas Company's Works.

Okehampton.—Barracks extensions.

DURHAM

Durham.—Miners' Hall extension.

Murton Colliery.—101 workmen's dwellings.

ESSEX

Clacton-on-Sea.—St. James' Church (£6,500).

HAMPSHIRE

Emsworth.—Baptist Chapel.

Portsmouth.—Municipal Tuberculin Dispensary.

Southbourne-on-Sea.—Club House

KENT

Erith.—Cinematograph Theatre, junction of Alford and Pembroke Roads, for Mr. W. T. Dolomere.

Gillingham.—Two bungalows, First Avenue, for Mr. G. J. Jeffery.

Shop, store and house, junction of Woodside and Springvale Road, Wigmore, for the Wigmore and District Small Holders' Club.

LANCASHIRE

Blackburn.—Workshop for the Blind (£1,500).

Bolton.—Bank premises, Bradshaw Gate: alteration for Lancashire and Yorkshire Bank, Ltd.

Four houses, Gregory Avenue, for Mr. Draper.

House, &c., Great Lever Park, Green Lane, for the Corporation Parks Committee.

Fifteen houses, Cloister Street, for Mr. E. Hargreaves.

Three houses, Uganda Street, for Mr. J. Hamer.

LINCOLNSHIRE

Barton-on-Humber.—Council School and cookery and manual instruction rooms.

Cleethorpes.—Council School, Reynold Street (£10,000).

Navenby.—Wesleyan Chapel.

Spalding.—Thirty-six working-class houses. Mr. E. Clarke (of Melton Mowbray), contractor (£5,200).

MIDDLESEX

Hanwell.—Dust destructor and buildings (£3,000). Accepted for two-cell destructor, Messrs. Heenan & Fronde, Ltd. (£1,333.)

NORTHAMPTONSHIRE

Burton Latimer.—Mr. Coles' Boot Factory: enlargement.

Corby.—Council School (£4,750).

Earl's Barton.—Church Institute, Station Road. Mr. H. W. Sheffield (of Wellingborough), architect (£600).

Messrs. Elson & Knight, contractors.

Towcester.—Council School (£3,000).

Wellingborough.—Council School, Park Street: re-building (£5,450).

NORTHUMBERLAND

Newcastle-upon-Tyne.—Picture Hall for the Moss Empires, Ltd.

Nine Banks.—Schoolmaster's house.

SHROPSHIRE

Clee Hill.—Council School.

Wellington.—Guardians' Children's Workhouse Quarters (£875). Mr. A. Jenkins, architect.

SOMERSET

Bath.—St. Luke's Church, South Lyncombe: extension for an additional 100 sittings (£1,900) Mr. M. A. Green, F.R.I.B.A., architect. Messrs. Chancellor & Sons, contractors.

Marston Magna.—Pair of cottages for Dr. W. Chatterton.

South Petherton.—Cottages, Watergore, for Mr. A. Allen.

STAFFORDSHIRE

Hanley.—All Saints' Vicarage and schools (£800).

Silverdale.—Cookery Centre. Mr. W. F. Slater (of Burslem), architect.

Stafford.—Thirteen cottages, Lammascote Estate, for Mr. T. Jones.

Stoke-on-Trent.—Cookery Centre. Mr. W. F. Slater (of Burslem), architect.

Wolverhampton.—Extension of the Briton Motor Company's Motor-car Works, Walsall Street.

Technical School, Wulfruna Street.

SURREY

Egham.—Boys' Secondary School.

Ham.—Artisans' dwellings. • Council surveyor.

SUSSEX

Eastbourne.—"Livingstone House": alterations for H.M. Office of Works.

"Upperton Lodge": alterations for Colonel W. A. Browne.

"Palgrave Mansions," Devonshire Place: addition for Messrs. Peerless, Dennis & Co.

Burlington Mews, Seaside: alteration for Mr. F. Bovill.

No. 14 Calverley Road: addition for Mr. E. H. R. Browne.

House, Dittons Road, for Messrs. A. W. King & Son.

Garage, Prideaux Road, for Mr. O. Bradford.

"Branksome," Saffrons Road: addition for Mr. W. M. Senior.

Four houses, Station Road, for Mr. E. Marchant.

No. 79 South Street: alterations for Eastbourne Artisans' Dwellings Co., Ltd.

Worthing.—Honey Factory, Ham Road.

WARWICKSHIRE

Hall Green.—Council School for 1,000 places. Great Mill Lane.

WORCESTERSHIRE

Kidderminster.—Four cottages, Churchfields, for Mr. J. Walters.

House, Bewdley Hill: additions for Mr. W. Johnstone.

Four houses, Park Lane, for Mr. G. Clark.

Worcester.—Boys' school, St. John's.

YORKSHIRE

Askrigg.—St. Oswald's Vicarage (£2,000). Messrs. Connon & Chorley, F.R.I.B.A. (of Leeds), architects.

Goole.—Catholic Church: tower.

Scarborough.—Municipal school extension (£1,600).

Sheffield.—Woodside Council School enlargement for an additional 180 places.

Thrybergh.—Roman Catholic School for 150 places.

WALES.

Briton Ferry.—Sixty-two working-class houses (£16,400). Mr. A. Clarke, architect.

SCOTLAND.

Cathcart.—Tenement, Rannoch Street, for Messrs. G. Eadie & Sons.

Clydebank.—Three-storey tenement with shops, Glasgow Road, for Mr. J. Dempsey.

Crieff Junction.—Hotel.

Elgin.—"Lochnabo Lodge": additions. Mr. E. C. Doig, architect.

Giffnock.—Church.

Double villa, Woodvale Avenue, for Mr. J. Allan.

Glasgow.—Dining-hall and offices, Tramways Car Depot, Albert Road, Crosshill, for the Corporation.

Tenements of dwelling-houses, Rutherglen Road, Govan, for the Corporation.

No. 155 Bath Street, Govan: additions and alterations for the School Board.

Merrylea Established Church, Newlands. Mr. P. McGregor Chalmers, architect.

Twenty-four terrace houses in Carnwath, Lauderdale and Gowrie Avenues, Newlands, for Messrs. G. Anderson, Ltd.

Double villa, Langlands Road, Newlands, for Messrs. J. Allan & Son.

Double villa, Mossfield Road, Newlands, for Messrs. G. Eadie & Sons.

SCOTLAND—continued.

Glasgow—continued.

Addition to works, Balmore Road, Possilpark, for the Glasgow Steel Roofing Co., Ltd.

Renfrew.—Picture Hall, Ferry Road, for the Renfrew Picture Palace, Ltd.

IRELAND.

Bailieborough.—House. Mr. G. F. Beckett, M.R.I.A.I. (of Dublin), architect.

Balla.—St. Patrick's Church. Messrs. Doolin & Butler, F.R.I.B.A. (of Dublin), architects.

Bandon.—Four Labourers' Acts cottages at Brinny, Kilbonane, and Knockroe, for the R.D.C. (£400.)

Castlereagh.—Fifty labourers' cottages, for the R.D.C.

Dublin.—Café, No. 125 Stephen's Green. Mr. T. J. Cullen, M.R.I.A.I., architect.

Eight attendants' cottages, Richmond Asylum.

Ninety working-class houses, Trinity Ward (£18,350).

Innishannon.—Labourers' Acts cottage, for the Bandon R.D.C. (£100).

Purdysburn.—Asylum extensions (£17,200).

Skibbereen.—Cottage at Hollybrook. Mr. J. F. M'Mullen, M.R.I.A.I. (of Cork), architect.

Stradone (near).—Doctor's residence for the Cavan Board of Guardians.

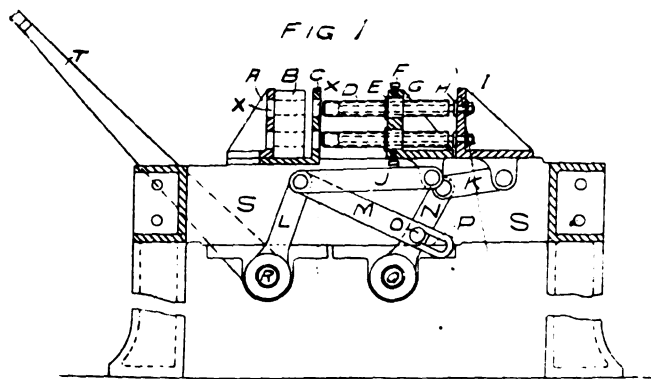
Templemartin.—Seven Labourers' Acts cottages for the Bandon R.D.C. (£700).

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

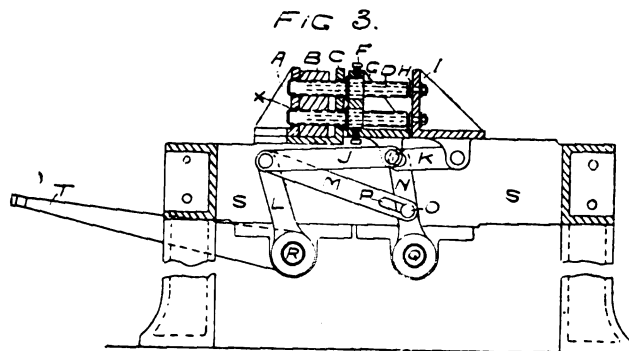
The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 4. Jan. 1, 1912.—Improvements in and relating to brick perforating machines and the like. George Emmerson, 3 Brook Road, Woodsetton, and W. R. Mobberley, Woodsetton, near Dudley. This invention relates to a new and improved machine for the purpose of perforating bricks and slabs when in the form of plastic clay or other plastic substance. The invention consists of sliding carriages G and I, and fixed brackets A and C, mounted on a bench S. The sliding carriage G carries the perforating tubes D, on which are brazed or welded flanged collars E, these collars prevent-



ing the tubes from collapsing or "crushing in" when being gripped by the set screws F. The front end of the perforating tubes D are sharpened to a knife edge to facilitate their passage through the brick or slab. Fixed brackets, A and C, are pierced by holes, x, to admit the passage of the perforating tubes D. The sliding carriage I carries the tube cleaners or plungers, H, which are a sliding fit inside the perforating tubes. The fixed bracket A supports the brick or slab B during the process of perforation, and the fixed bracket C serves the purpose of holding the brick or slab while the perforating tubes D are being withdrawn after perforation. The sliding carriage G is connected by two drag-links, J, and two levers, L, to the rock-shaft, R, on which is also mounted the operating lever T. The sliding carriage I is connected by two drag-links, K, to lever n, which is carried on rock-shaft Q. The lever n is connected to levers L by two drag-links, M, in one end of which is a slot P, which slot slides along pin, O, which is fixed in lever n. After the perforating tubes D have passed through the greater part of the brick or slab, the tube cleaners or plungers, H, follow up and push out the cores that have entered the tubes during their passage through the brick or slab. On the return or backward stroke of the machine, the

sliding carriage I is pushed back by the sliding carriage G, thus completing the cycle of operations. Fig. 1 is a longitudinal sectional elevation showing the sliding brackets G and I at the commencement of their forward stroke and the brick or slab B in position between fixed brackets A and C.



ready to be perforated. Fig. 3 is a sectional elevation, and shows sliding carriages G and I at the end of their forward stroke, the sliding carriage I carrying the tube cleaners or plungers, H, having overtaken sliding carriage G, thus clearing out the perforated tubes during the latter part of their forward stroke. September 11, 1912.

PATENT SPECIFICATIONS PUBLISHED
OCTOBER 24, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 17,230. July 28, 1911.—D. H. Brownfield, "Kenilworth," Abbey Road, Llandudno, and Frederick Beech, 33 Lorne Street, Burslem, Stoke-on-Trent. Novel or improved composition for use in making fire-resisting bricks, quarries, tiles for fireplaces, and the like.

21,516. Sept. 29, 1911.—A. E. Bunge, 1122 Cuyo, Buenos Aires. Rubbish-burning apparatus combined with kitchen ranges.

22,234. Oct. 9, 1911.—Mrs. Mary Hooker, 76 Richmond Road, Kingston-on-Thames. Apparatus for making air-gas.

22,951. Oct. 18, 1911.—E. A. Ward, 186 Antrobus Road, Handsworth, Birmingham. Appliances for cleaning or removing obstructions from drain and other pipes, flues, and the like.

23,694. Oct. 26, 1911.—H. F. Berry, 9 Victoria Street, S.W. Apparatus for heating, drying, and otherwise treating stone and other materials for use on roads and life surfaces.

25,219. Nov. 13, 1911.—Maria Giese, Bottmuhle 3, Cologne, Germany. Manufacture of hollow floors and ceilings.

25,273. Nov. 14, 1911.—J. D. Prior, 197 Holliday Street, Birmingham. Domestic firegrates.

25,927. Nov. 20, 1911.—Gustave Moncany, 10 Cité Joli, Paris. Process for obtaining upon paper ornaments giving to the material the exact appearance of engraved or carved metals.

25,970. Nov. 21, 1911.—M. H. Robinson, Parliament Chambers, Great Smith Street, Westminster, S.W. Method of construction of piled wharves, piers and the like, and apparatus therefor.

27,830. Dec. 11, 1911.—E. F. Stimson, 88 Streathbourne Road, Upper Totting, S.W. Stoves.

28,649. Dec. 20, 1911.—F. T. A. Riley, 25 Sandy Lane, Accrington, Lancs. Domestic firegrates.

29,061. Dec. 23, 1911.—Robert Parry, 2 Grosvenor Street, Cheetham Hill, Manchester. Street and like gullies.

2,875. Feb. 3, 1912.—J. W. Glover, Ranelagh Works, Royal Avenue, and Geo. Glover & Co., Ltd., 122 King's Road, Chelsea. Leak detector for gas meters.

3,456. Feb. 12, 1912.—James Heaton, The Ravenhead Sanitary Pipe and Brick Co., Ltd., St. Helens, Lancs. Machine for cutting and shaping clay or the like plastic material.

5,380. March 4, 1912.—A. R. Groome, 2 Tower Villas, Tower Road, Hereford, architect and surveyor. Weather excluders for doors and casements.

6,201. March 12, 1912.—The Trussed Concrete Steel Co., Ltd., Caxton House, Tothill Street, Westminster, S.W. Ferro-concrete construction for floors and the like.

7,745. March 30, 1912.—Date claimed under International Convention March 30, 1911. Nino Magelssen, 9 Platongatan, Christiania, Norway. Manufacture of fireproof articles and fireproof coats on articles.

8,297. April 6, 1912.—Chas. Taylor (Birmingham), Ltd., Bartholomew Street, Birmingham, and W. Kennedy, 11 Furzeham Road, West Drayton, Middlesex. Attachment and "stirrup" of the like character for reinforcing concrete.

10,091. April 29, 1912.—Date claimed under International Convention April 29, 1911. Chas. de Vaulchier, 18 rue Saint-Georges, Paris, and Pierre Samain, Cusy (Haute-Savoie), France. Apparatus for regulating water pressure.

11,007. May 9, 1912.—J. J. Fraser, 16 Kersland Street, Hillhead, Glasgow. Manufacture of articles wholly or partly of artificial stone or marble and a composition therefor.

11,238. May 11, 1912.—Date claimed under International Convention May 12, 1911. Eduard Friedrich, 25b Carl Heinestr., Leipzig-Plagwitz, Germany. Breaking and crushing apparatus.

12,596. May 28, 1912.—J. De Mars, 2844 Twenty-First Street, San Francisco, California, and A. J. Walker, 356 Main Stret, Niagara Falls, U.S. Sash lock and anti-rattler.

13,653. June 11, 1912.—J. F. L. Nowell, 102 St. Stephen's Road, Hounslow, and J. S. Nicholas, 25 Hamilton Road, Harrow. Metal beams or girders.

14,097. June 17, 1912.—Date claimed under International Convention July 13, 1911. The Firm "Hermes," Schlossvertriebsgesellschaft, Neue Schonhauserstr. 8, Berlin. A safety device for window and door fasteners.

PROFESSIONAL ETHICS.

THE agitation now exercising the architectural profession at home regarding a code of ethics threatens, we much fear, says *Indian Engineering*, to accomplish too much. Not to say that there should not be certain offences which must be defined by code as unprofessional, but we have a fear that the inclusion of too many in such a code will have an insalutary effect on the architectural conscience, just as bringing up a child under too many restrictions often results in robbing him of a natural sense of responsibility, and warps his own judgment as to what plainly constitute right and wrong. Such a person falls an easy prey to temptation and, moreover, gives any natural ingenuity he may possess an impetus in the direction of finding out what he may do in order to circumvent the code. With a voluminous code will arise a tendency to judge a man only in accordance with its articles, just as a magistrate condemns or acquits a man according as he has or has not violated the strictly laid down laws of the penal code. The magistrate will tell you himself, as he has done on more than one occasion, that he is not on the bench for the purpose of administering justice, but the law. Accordingly, many an offender escapes who has done a palpable wrong but has kept outside the meshes of the law. In the same way, should the architectural bodies attempt too much codifying they might be placed in the position of the magistrate on the bench. Better for them to make a few salient regulations for their own guidance—that is, for the guidance of the selected few who will constitute the bench, while they give the profession at large to understand that they possess the right, by constitution, to arraign at their bar any who in their judgment are pursuing a course not in accordance with the dignity of the profession. It seems necessary in the first place to come to a decision as to which of the architectural bodies in the kingdom are of sufficient standing to contribute one, or more, members to an ethical council; it then follows logically that every individual calling himself an architect should be compelled to belong to one or other of these bodies, or consider himself an unrecognised practitioner. From each of these architectural bodies a strong council should then be formed, each body electing its own representative or representatives, the number to be regulated according to its strength and professional standing. In the hands of a council so constituted, which would presumably represent the pick of the profession, might safely be left all the jurisdiction ethics demand. The members would have only a few leading rules for their guidance; their own moral sense and good judgment would supply all the rest that would be demanded to determine whether a man has offended against ethics or has not. To this council full powers ought to be given, and from its decisions there should be no appeal. Nor should individual societies, once such a council has been formed, retain to themselves the right of sitting in judgment on one of their own body. Every offender against the ethics of the profession must go up to the one bar of judgment and stand or fall by its decision. We cannot help thinking that such a mode

of deciding will have a farther reaching effect than the action of so many men appointed just to interpret an elaborately drawn-up code. Before a bar such as this there will be no quibbling; each offender will understand that he is being tried not by a code which may be quibbled with, but by a sense of right or wrong in the abstract as it is in the minds of his judges. All in the profession who may be tempted to sail close to the wind in their transactions will have a wholesome fear that they may not escape, even when for such a venality as this they may have to answer to a tribunal not bound by the mere phraseology of a code, but by a wider horizon which includes what is bad form just as much as it includes what is palpable misdemeanour. A court of ethics, in short, should be constituted on the lines of what is known as a court of honour—i.e., it should be composed of a body of honourable men who will not need to open a book to tell them whether this or that man has sinned. Such a tribunal will, we think, have more terrors for the evildoer than any other.

VARIETIES.

A SCHEME is being pushed forward by the local authorities concerned for the provision of a bridge over the river Ouse at Boothferry. The cost of the work is expected to be £45,000.

THE Withernsea Urban District Council have instructed Messrs. Taylor & Wallin, Newcastle and Birmingham, to report as to whether a local source of water can be used for supplying the urban district.

THE Craven Committee have recommended for appointment to the Studentship at the British School at Athens Mr. Stanley Casson, formerly Exhibitioner of Lincoln College, now Senior Scholar of St. John's College, Oxford. The Studentship is of the value of £100.

THE Executive Committee of the Swansea Harbour Trust last week decided, owing to the increase in the tinplate and galvanised sheet trades, to advertise for tenders for the extension of the warehouse accommodation of the King's Dock, so as to provide an additional area of 17,000 feet.

H. M. CONSUL-GENERAL at San Francisco (Mr. A. C. Ross, C.B.) reports in the *Board of Trade Journal* that it is estimated that over £32,000,000 will be expended on public works in that city during the next two years. Of this amount \$59,000,000 (about £12,128,000) are to be spent in the erection of buildings, &c., for the Panama-Pacific International Exhibition. Among other items of proposed expenditure are the following: Harbour improvements, \$9,000,000; Civic Centre and City Hall, \$8,800,000; Opera House, \$1,000,000; City and County Hospital, \$230,725; Carnegie Library, \$750,000; refuse incinerators, \$190,413; fire equipment and stations, \$191,569; United States Sub-Treasury, \$500,000.

TRADE NOTES.

MESSRS. SIEMENS BROTHERS, Dynamo Works, Ltd., inform us that they have obtained the contract for the supply of "Wotan" traction lamps to the Great Indian Peninsular Railway Company for the ensuing twelve months.

MESSRS. GEORGE MILLS & Co., LTD., Globe Ironworks, Radcliffe, near Manchester, the proprietors of the "Titan" sprinkler, have received the following testimonial from Messrs. Wm. Adam & Son, Blantyre Saw Mills, High Blantyre, N.B.: "Last night (October 22) we had a fire in our saw mill beside the large circular saw, and had it not been for the very effective action of the sprinkler the whole building would have been burned. The two sprinklers above where the fire took place put it out before any of us got in. The bell wakened me, and I was pleased to see the splendid results."

THE difficulty in connection with the lighting of Holborn has been settled by a compromise. Originally the Works Committee of the Holborn Council recommended that the Gas Company's tender should be accepted, but as the tender worked out at a higher figure than the Electricity Supply Company's estimate, the Council referred the matter back to the Works Committee for further consideration. Eventually it was decided to light half of Holborn by electricity and half by gas. The electrical portion has just been completed. It extends from Chancery Lane to Kingsway. High efficiency Mazda drawn-wire lamps have been chosen, and a very fine lighting effect is obtained.

THE Architect and Contract Reporter.

FRIDAY, NOVEMBER 8, 1912.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie-Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

(Continued on page 7.)

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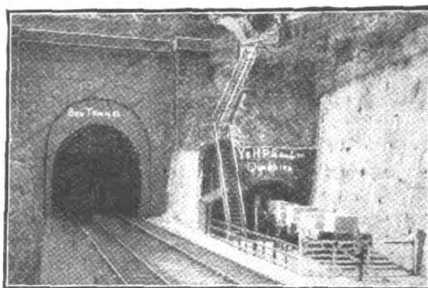
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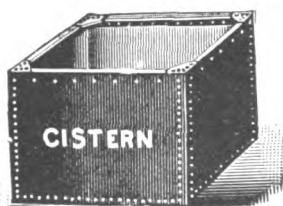
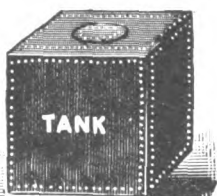
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DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

SHEFFIELD.—Nov. 23.—The Guardians of Ecclesall Bierlow Union invite plans for a temporary hospital to be erected at the workhouse to accommodate twenty-four beds, with administrative quarters, dayroom, &c. The ordinary rate of commission will be paid in respect of the plan which is accepted, and no financial liability will be undertaken for rejected plans. Mr. J. E. Moulding, clerk, Union Offices, The Edge, Sheffield.

CONTRACTS OPEN.

ASPATRIA.—Nov. 12.—For proposed alterations to property in King Street, for Mrs. M. Rook. Mr. J. Henney, architect and surveyor and civil engineer, Maryport and Aspatria.

BASFORD.—For carrying out additions to bakery and shop at Basford, Staffs., for the Silverdale Co-operative Society, Ltd. Deposit £1 1s. Mr. F. E. L. Harris, architect, 1 Balloon Street, Manchester.

BEARPARK.—Nov. 19.—For alterations at the Council School, for the Durham County Council. Messrs. Clark & Moscrop, architects, Feethams, Darlington.

BIRMINGHAM.—Nov. 13.—For the construction of a bridge over the river Cole in Forman's Road, Sparkhill, including excavation, concrete, brickwork, arches, stonework, river inverting, brick and slag retaining walls, granite sett paving, kerbing, channelling, flagging, and lowering of sewer, for the Public Works Committee. Deposit £2. Mr. H. E. Stilgoe, M.I.C.E., city engineer and surveyor, Council House, Birmingham.

BIRMINGHAM.—Dec. 18.—For the erection of homes for epileptic and feeble-minded children and adults, a school, an administration block, assembly room and other buildings and works in connection therewith, at Monyhull Colony, King's Heath, for the Guardians. (Messrs. C. Whitwell & Son, architects, Newhall Street, Birmingham.) Send applications and £25 deposit by Nov. 11 to Mr. R. J. Curtis, clerk to the Guardians, Union Offices, Birmingham.

BRISTOL.—Nov. 18.—For the construction of a workmen's messroom on the west wharf of the Royal Edward Dock. (Mr. W. W. Squire, engineer, Cumberland Road, Bristol.) Send £2 deposit to the Secretary of the Docks Committee, Docks Office, 19 Queen Square, Bristol.

BRISTOL.—Nov. 26.—For erection of the Bristol labour exchange and probate registry. Deposit £1 1s. Mr. F. A. Huntley, H.M. Office of Works, Bristol, and H.M. Office of Works, &c., Storey's Gate, London, S.W.

BROWNEY.—Nov. 19.—For alterations at the Council School, for the Durham County Council. Messrs. Clark & Moscrop, architects, Feethams, Darlington.

BYERS GREEN.—Nov. 19.—For erection of a Council School (for about 500 scholars), for the Durham County Council. Mr. H. A. Carry, architect, 3 Bigg Market, Newcastle-upon-Tyne.

CAISTOR.—Nov. 21.—For the erection of cottages in their area (up to sixty in number) to be built in blocks of two, for the Rural District Council. Mr. A. A. Padley, clerk, Council Offices, Caistor.

OAKENSHAW.—Nov. 19.—For erection of a Council School (for about 400 scholars), for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

CASTLETOWN.—Nov. 19.—For alterations and improvements at the Council School, for the Durham County Council. Mr. N. Richley, Shire Hall, Durham.

CHARTHAM.—Nov. 15.—For the erection of a store at the Kent County Asylum at Chartham, near Canterbury. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury.

CHELMSFORD.—Nov. 18.—For erection of an engine house at their waterworks, Milkmay Yard, for the Town Council. The Borough Engineer's Office, 16 London Road, Chelmsford.

CHESHUNT.—Nov. 19.—For carrying out certain structural alterations, repairs, and other works at Elm Arches, Turner's Hill, for the Urban District Council. Mr. J. E. Sharpe, engineer and surveyor, Manor House, Cheshunt.

CHORLEY WOOD.—Nov. 25.—For the erection and completion of a County Council School. Deposit £2 2s. Mr. Urban A. Smith, county surveyor, Hatfield, Herts.

CLECKHEATON.—Nov. 13.—For the various works required in erection of a branch store, Northgate, for the Cleckheaton Industrial Co-operative Society, Ltd. Messrs. R. Castle & Son, architects, London City and Midland Bank Chambers, Cleckheaton.

DOVER.—Nov. 18.—For the following works at the sea-front baths, Marine Parade, for the Town Council: Tiling ladies' bath, supplying and erecting two centrifugal pumps with electric motors, and other works in connection therewith. Deposit £2 2s. Mr. W. C. Hawke, A.M.I.C.E., borough engineer, Maison Dieu House, Biggin Street, Dover.

DURHAM.—Nov. 18.—For carrying out work in connection with the formation of a tennis court, railing off the football field, and alterations to the building of the Hartlepool Henry Smith School. Mr. J. A. L. Robson, county secretary for higher education, Shire Hall, Durham.

EASTBOURNE.—Nov. 14.—For the construction of a coal bunker retaining-wall in either brickwork or reinforced concrete at the electricity works, for the Electricity and Street Lighting Committee. The Borough Electrical Engineer, Electricity Works, Eastbourne.

FEATHERSTONE.—Nov. 22.—For the following works, for the West Riding Education Committee: Featherstone, North Featherstone Lane Council School alterations (builder and joiner). The Education Architect, County Hall, Wakefield.

GRANTOWN-ON-SPEY.—Nov. 25.—For the mason, carpenter, plumber, slater, plaster, painter, and steel works in connection with extensive additions to the Palace Hotel. Mr. R. B. Pratt, A.R.I.B.A., architect, 110 High Street, Elgin, and at the hotel.

HAILEYBURY (HERTS.).—Nov. 14.—For erection of new big school, &c., at Haileybury College. Send applications by Nov. 14 to Messrs. J. W. Simpson & Maxwell Ayrton, architects, 3 Verulam Buildings, Gray's Inn, London, W.C.

HALIFAX.—Nov. 13.—For the various works required in erection of new offices at Highroad Well. Messrs. Jackson & Fox, Rawson Street, Halifax.

HIGHER BEBINGTON (CHESHIRE).—Nov. 21.—For elementary school at Higher Bebington (accommodation 400), for the Administrative Sub-Committee for Education for Bebington and Neston area. Deposit £1 1s. Mr. H. Grayson, F.R.I.B.A., M.A., architect, Royal Liver Building (sixth floor), Liverpool.

HULL.—Nov. 12.—For erecting dock offices, dock-master's house, and offices for customs surveyor at the Joint Dock, for the Hull Joint Dock Committee. Mr. W. Bell, architect, North-Eastern Railway, York.

IRELAND.—Nov. 11.—For erection of a dispensary and medical officer's residence in the townland of Coolnacran, convenient to the village of Loughbrickland, for the Guardians of Banbridge Union. Mr. W. W. Larmor, architect, the Poor-Law Office, Banbridge.

KEIGHLEY.—For mason's and joiner's work in connection with fire escape at Wesley Place Council Schools. The Borough Engineer.

LEEDS.—For the excavators', bricklayers' and masons', joiners', plumbers', painters', iron roof, and girder work required in the erection of glass furnace house, producer engine house and chimney at Hunslet, Leeds. Mr. F. Mitchell, architect and surveyor, 9 Upper Fountaine Street, Albion Street, Leeds.

LEWES.—Nov. 19.—For the construction of the low-level pumping station and contingent works, for the Corporation. Deposit £3 3s. Messrs. Brierley, Holt & Co. (Arthur Hindle, M.I.C.E., and P. Holt Whitaker, A.M.I.C.E.), engineers, 46 Abingdon Street, Blackpool.

LONDON.—For steelwork, plasterer's work, and joinery for a picture palace. Apply to Mr. E. Jackson, Rectory Works, White Horse Lane, Stepney, E.

LONDON.—Nov. 14.—For alteration and extension of the boiler house at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union. Deposit £2. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

LONDON.—Nov. 19.—For the supply and erection of two water supply tanks at the Town Hall, for the Metropolitan Borough of Deptford. The Borough Surveyor, Town Hall, New Cross Road, S.E.

LONDON.—Nov. 21.—For erection of a branch library building in Northwold Road, Upper Clapton, N.E., for the Hackney Borough Council. (Mr. E. Cooper, F.R.I.B.A., 4 Verulam Buildings, Gray's Inn, W.C.) Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney, N.E.

LUDLOW.—Nov. 16.—For the erection of a drill hall and offices for the Shropshire Territorial Force Association. Send applications and £1 1s. deposit by Nov. 9 to Mr. John Butters, architect, Castle Square, Ludlow.

MANCHESTER.—Nov. 15.—For the execution of sanitary alterations in connection with the following premises, for the Corporation—viz.: 438 to 446 Oldham Road, and 2 to 6 Elm Street; 2 Baxter Street, 71 and 73 River Street, Hulme; 6 to 16 Elvington Street, Hulme; 6 Smith Street, and 3 to 15 Carver Street, Chorlton-on-Medlock. The Manager of the Drainage Department, Manchester.

MARSDEN.—Nov. 12.—For the various works required in the alterations and additions to the Old Red Lion Inn, for Messrs. Bentley & Shaw, Ltd., Lockwood Brewery. Send names by Nov. 12 to Messrs. J. B. Abbey & Son, architects and surveyors, 34a New Street, Huddersfield.

MEXBOROUGH.—For the whole of the works required in the reconstruction of business premises, High Street, for Messrs. Hunters the Teamen, Ltd. Send applications at once to Mr. W. Wrigley, A.R.I.B.A., architect, 2 King Street, Wakefield.

MORLEY.—Nov. 11.—For the bricklayers', joiners', plumbers', and slaters' work required in the alteration and addition to Victoria Mills, for Messrs. Benn & Webster. Mr. T. A. Buttery, Lic.R.I.B.A., architect, Queen Street, Morley, and at 1 Basinghall Square, Leeds.

NORWICH.—Nov. 22.—For erection of a shelter at the cemetery in place of the one recently destroyed by fire, for the Burial Board. Mr. A. E. Collins, M.I.C.E., city engineer, Guildhall, Norwich.

PLAISTOW (SUSSEX).—Nov. 16.—For alterations and additions to the "Bush Inn," for Messrs. King & Barnes, Ltd. Mr. C. H. Burstow, architect, King's Road, Horsham.

PORTSMOUTH.—Nov. 19.—For erection, completion and maintaining in repair for six months the following works, for the Corporation—viz.: (1) a block of ferro-concrete (Hennebique) stores and offices on the Camber Quay, Portsmouth (deposit £3 3s.); and (2) a boatswain's office, meters' office, labourers' room, and gentlemen's convenience at Flat-house Wharf (deposit £2 2s.), all in the borough of Portsmouth. The Borough Engineer's Offices, Town Hall, Portsmouth.

PRESTON.—Nov. 15.—For erection of a tram shelter at the Lodge, Garstang Road and Moor Park Avenue; also for erection of a public convenience, Penwortham Bridge approach, for the Corporation. Deposit 10s. each contract. The Borough Surveyor, Town Hall, Preston.

RUGBY.—Nov. 14.—For erection of a discharge block at their infectious diseases hospital, Harborough Magna, for the Rugby Joint Hospital Board. Mr. T. W. Willard, architect, Market Place, Rugby.

SCOTLAND.—Nov. 11.—For mason, joiner, plumber, and plaster work in connection with alterations in buildings for the extension of staff and nurses' bedroom accommodation at Craiglockhart, for the Edinburgh Parish Council. Mr. R. M. Cameron, architect, 53 Great King Street, Edinburgh.

SCOTLAND.—Nov. 11.—For the mason, carpenter, and slater work of the following buildings, and plaster work of Nos. 1 and 6: Parish of Tarves—(1) Raitshill, dwelling-house; (2) North Quilquox, single cottage; (3) Broadward, double cottage. Parish of Methlick—(4) Chapelpark, single cottage. Parish of Fyvie—(5) East Mains of Ardlogie, double cottage; (6) Woodhead, dwelling-house; (7) Invercamey, single cottage. Parish of New Deer—(8) Knoxhill, single cottage. Parish of Udney—(9) Cairnfehil, double cottage. Mr. C. G. Smith, factor, Haddo House Estates, Aberdeen.

SCOTLAND.—Nov. 18.—For alterations and additions to the Stornoway Post Office, for the Commissioners of H.M. Works and Public Buildings. (Tenders are required for the whole work and not for separate trades.) Deposit £1 1s. The Postmaster at Stornoway or Inverness Post Offices, or H.M. Office of Works, 3 Parliament Square, Edinburgh.

SKIPTON.—Nov. 11.—For the masons', joiners', plumbers', plasterers', slaters', and painters' works required in connection with the erection of a farmhouse, stables, and cottage at Farnhill Hall. Mr. J. Hartley, architect, Skipton.

SOMERSET.—Nov. 19.—For erection of stables at Langport, Highbridge, and Martock, for the Great Western Railway Co. The Engineer, Taunton Station.

WALES.—Nov. 11.—The Glamorgan County Council is desirous of contracting for the following works—viz.: (a) New school at Llysvaen; (b) cookery centre at Newtown Council School; (c) new Council School at Godrergrraig, near Ystalyfera; (d) new window hoppers at Nantyffyllon boys' and infants' schools; (e) new school at Pontllw, near Gorseinon; (g) removal of temporary school building from Llanbradach to Llanharry. The Glamorgan County Hall, Cathays Park, Cardiff.

WALES.—Nov. 14.—For building thirty houses and making roads at Hirwain, for the Bodwigiad Building Club. The Bodwigiad Arms Hotel, Hirwain, or Mr. A. S. Cameron, architect, Glanant Street, Aberdare.

WALES.—Nov. 16.—For erection of thirty houses and the construction of roads and drains, for the Coronation Building Club, Mardy. Mr. E. Rees, architect and surveyor, Alexandra Chambers, Taff Street, Pontypridd.

WALES.—Nov. 18.—For new shop front and fixtures at the Co-operative Stores, Pontrhydyfen, near Port Talbot. Messrs. Evans & Jones, M.S.A., architects and surveyors, High Street, Port Talbot.

WALES.—Nov. 19.—For the supply of steel girders and other steel and iron work for an engine shed, &c., at Maesglas, Newport, and also for the erection of such shed—to be let in two contracts—for the Great Western Railway Co. The Engineer, Paddington Station, London.

WALES.—Nov. 20.—For erection of a vestry at the Baptist Church, Gowerton. Mr. J. Williams, Church Street, Gowerton, Glamorgan.

WALSALL.—Nov. 13.—For extension of the boiler house at the workhouse, Pleck Road, and for the putting in of foundations for new Lancashire boiler there, for the Guardians. Mr. A. H. Lewis, clerk to the Guardians, Union Offices, 29 Leicester Street, Walsall.

WEDNESBURY.—Nov. 12.—For the erection of a public urinal in the High Bullen, for the Town Council. Mr. E. Martin Scott, borough surveyor, Town Hall, Wednesbury.

WESTON-SUPER-MARE.—Nov. 19.—For the erection of a stable, for the Great Western Railway Co. The Engineer, Bristol Station.

WIGMORE.—For the erection of a large building, for the Wigmore, Gillingham, and District Small Holders' Society, Ltd. The Secretary, 110 Napier Road, Gillingham, Kent.

YORK.—Nov. 12.—For erection of thirty cottages in Alma Terrace, Fulford Road, for the Corporation. Deposit £2 2s. Mr. F. W. Spurr, city engineer, Guildhall, York.

HAMPSHIRE AND ISLE OF WIGHT ARCHITECTS' ASSOCIATION.

A MEETING of local members of the Hampshire and Isle of Wight Architects' Association was recently held at the Hartley University College to consider the question of the proposed Day Classes in Architecture at the College. The chair was taken by Mr. Norman C. H. Nisbett, A.R.I.B.A., of Winchester. The Acting-Principal (Professor Eustice) and the Lecturer in Architecture (Mr. T. A. Parker, A.R.I.B.A.) gave particulars of the provision made in the College for architectural courses.

The Secretary of the Association (Mr. R. M. Lucas, F.R.I.B.A.) stated that he would bring forward at an ordinary meeting of the Association the following recommendations, viz.: "That in order to encourage prospective pupils in architecture to take up a course, those who have successfully passed through an approved course of study, extending over two years, should be admitted as pupils in architects' offices at a reduced premium and for a shortened period of pupilage."

It was also agreed to recommend that "Pupils should be encouraged to pursue their studies concurrently with their office work by attending evening classes, and in special cases by attending day classes in work bearing on the architectural profession."

TENDERS.**BIRMINGHAM.**

For the supply of two 5,000 k.w. turbine sets for the Summer Lane Generating Station.
British Thomson-Houston Co., Rugby (*accepted*).

GUISBOROUGH.

For the erection of Children's Homes, for the Board of Guardians.
J. G. PORTEOUS, Guisborough (*accepted*). £2,157 0 0

HORTON.

For the work of constructing a main outfall sewer for the eleventh L.C.C. asylum which is about to be erected on the Horton estate and for the formation of an approach road to the site.

Construction of Main Outfall Sewer.

Airds, Ltd.	£5,846	0	0
Paterson	4,350	0	0
Dickson	4,160	0	0
Kavanagh & Co.	3,977	0	0
J. MOWLEM & Co., LTD., Westminster			
(<i>accepted</i>)	3,283	0	0

Formation of Approach Road.

Mowlem & Co.	£1,193	0	0
Boyer	1,075	0	0
Dickson	1,034	0	0
S. KAVANAGH & Co., Surbiton (<i>accepted</i>)	977	0	0

HULL.

For the necessary work to be performed in the erection of a fisherman's school in Boulevard, for the Education Committee. Mr. J. H. HIRST, City architect, Hull.

Simpson & Son	£5,595	0	0
Goates & Sons	5,475	0	0
Kirkwood	5,457	19	8
Levitt	5,432	4	6
Fenwick	5,266	0	0
Kettlewell	5,249	0	0
G. H. PANTON & SONS, Hull (<i>accepted</i>)	5,246	0	0

LONDON.

For the rebuilding of the Middle Row school, Kensington, for the London County Council.

Leslie & Co.	£24,529	0	0
Kearley	23,498	0	0
F. & H. F. Higgs	23,235	0	0
Johnson & Co.	23,086	0	0
J. & C. Bowyer	22,936	0	0
Godson & Sons	22,730	0	0
Wallis & Sons	21,944	0	0
Patman & Fotheringham	21,923	0	0
McCormick & Sons	21,332	0	0
E. LAWRENCE & SONS, LTD., 15-16 Wharf			
Road, City Road (<i>recommended</i>)	21,300	0	0
Architect's estimate	21,500	0	0

For enclosing, paving, and draining additional land in connection with the Randall Place school, Greenwich, for physically defective and deaf children, for the L.C.C.

Lister & Co.	£598	0	0
Galbraith Bros.	586	0	0
Appleby & Sons	487	0	0
Heath & Sons	480	0	0
Bragg & Sons	469	0	0
Parker & Sons	465	0	0
Goad	456	0	0
Bailey	449	19	0
E. MILLS, Blackheath (<i>recommended</i>)	437	0	0
Architect's estimate	442	0	0

For the extension and alteration of the existing middle dummy at Greenwich Pier, for the L.C.C.

John Stewart & Son	£2,970	0	0
W. C. Reeder & Co.	2,345	13	6
Fletcher, Son & Fearnall	2,195	0	0
The Thames Ironworks, Shipbuilding and			
Engineering Co., Ltd.	2,088	0	0

The Highways Committee are advised that the prices submitted are considerably in excess of the estimated value of the work, and suggest that none of the tenders should be accepted.

LOUGHBOROUGH.

For the erection of a refuse destructor house over the existing destructors at the sewage farm. Mr. A. H. WALKER, A.M.I.C.E., borough surveyor, Loughborough, Leics.

Mounteney	£872	15	7
Moss & Sons	816	0	0
Wileman & Gange	780	0	0
Jacques	777	12	0
Barker & Sons	749	0	0
A. FAULKES, Loughborough (<i>accepted</i>)	720	0	0

NORTHAMPTON.

For the erection of a secondary school for girls in St. George's Avenue, for the Education Committee. Messrs. SHARMAN & ARCHER, architects, Wellingborough.

Hickman & Son	£18,145	0	0
Henson & Son	18,100	0	0
Sharmar & Son	17,936	0	0
Higgins	17,892	0	0
Clarke	17,700	0	0
H. Martin, Ltd.	17,680	0	0
Higgs	17,487	0	0
Fisher	17,280	0	0
Beardmore & West	17,230	0	0
Greyn	17,180	0	0
Hawtin	16,989	0	0
Hacksley Bros.	16,979	0	0
Cosford	16,750	0	0
PULLEN & SONS, Northampton (<i>recommended</i>)	16,655	0	0
Architects' estimate (revised)	16,628	0	0

RAUNDS.

For the erection of a public elementary school, for the Northamptonshire Education Committee. Messrs. BLACKWELL & RIDDEY, architects, Kettering.

Hickman & Sons	£7,168	0	0
Pettitt	6,669	0	0
Smith, Edmunds & Co.	6,600	0	0
Smith & Bunning	6,479	0	0
Smith & Son	6,347	7	0
Beardmore & West	6,280	0	0
Hacksley Bros.	6,189	0	0
Packwood	6,173	0	0
Marriott	6,107	0	0
PULLEN & SONS, Northampton (<i>recommended</i>)	5,921	13	0

TAMWORTH.

For the erection of a kitchen and stores, for the Board of Guardians.

F. C. HILL, Four Oaks (<i>accepted</i>)	£1,272	16	0
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TOTTENHAM.

For the construction of a police station at Tottenham. Mr. J. DIXON BUTLER, F.R.I.B.A., surveyor, New Scotland Yard, S.W.

Knight & Son	£14,239	0	0
Stapleton & Sons	13,814	0	0
Hall, Bedall & Co.	13,707	0	0
Goodall & Son	13,636	0	0
Wall & Co.	13,608	0	0
Perry & Co.	13,400	0	0
Pattinson & Sons	13,364	0	0
Saley & Son	13,277	0	0
Godson & Sons	13,250	0	0
Fairhead & Son	12,230	0	0
Wilmott & Sons	13,200	0	0
Ansell	13,100	0	0
Roome & Co.	13,100	0	0
Lawrence	13,094	0	0
Symes	13,088	0	0
Dove Bros.	13,073	0	0
Monk	13,050	0	0
Grover & Son	12,996	0	0
Patman & Fotheringham	12,843	0	0
Rowley	12,734	0	0

WOKING.

For the erection of a Council School at St. John's.

Tarrant	£3,404	0	0
Aylott	3,393	0	0
Drowley & Co.	3,357	0	0
S. SILK (<i>accepted</i>)	3,203	0	0

HOUSE AT ILKLEY.

THIS house has been erected for Mr. Oliver Greenwood, of The Grove, Ilkley. It is built of common bricks, and covered with cement rough-cast and finished white, and has a red-tiled roof. It contains a hall panelled in oak, at one side of which three arches lead to the staircase, kitchen, offices, cloak-room, &c. There is a large sitting-room and dining-room, entered from the hall, and on the first floor four bedrooms, bath, linen and housemaid's room. The roof is constructed so that three more rooms can be added if required.

The works have been carried out under the superintendence and from the designs of Mr. W. H. H. Marten, Lic.R.I.B.A., Leeds.

ST. ANTHONY'S SCHOOL, BEESTON.

THIS school has been designed for 400 children at a cost of about £6 15s. per head (without land). It has been erected by its promoters with the double object of conforming to all requirements of the Educational Authority for teaching purposes and to provide an Assembly Hall for the parish. The latter idea is effected by movable screens,

Sons, builders, of Beeston, from the drawings and under the superintendence of Mr. W. H. Herbert Marten, Lic.R.I.B.A., architect, Leeds.

ST. ÆLRED'S CHURCH, STARBECK.

THE plan of this church is so arranged that extensions can be made without pulling down any of the main structure or walls; at the same time, it is a complete church in itself. It consists of a simple nave arcade, chancel and sanctuary, with small lady altar on one side and sacristy on the other; there is also a porch and spacious vestibule. The nave arcade (which is formed of terra-cotta arches in red and buff alternate bands) is filled in with wood traceried windows, with cement panelled dados below the springing of the arches. These windows and panels can be removed with little trouble when the aisle extensions are required and placed in the new walls, thus saving any waste. The sanctuary is in the form of an apse with domed roof, and is separated from the nave by a terra-cotta arch, on either side being Gothic screens dividing off the lady altar and the sacristy. There is also an arch at the entrance to the nave from the vestibule, the lower part of which is filled in with



HOUSE AT ILKLEY.—Mr. W. H. HERBERT MARTEN, Lic.R.I.B.A., Architect.

by which means five classrooms used for boys and girls are thrown into one large hall, thereby giving seating accommodation for 450 persons, and leaving space for a platform at one side, the two rooms for teachers, one on either side, being suitable for retiring-rooms.

The style of the building itself is scholastic and simple, no money being spent on anything but which is absolutely necessary for the purpose. The lower ground level is exclusively for infants' use, and has three classrooms with south aspect. These can also be converted into one large room by movable screens. There is a corridor hall for marching or playing purposes on wet days, with teachers' rooms overlooking same.

Every room in the building is cross-ventilated, and is so arranged that the ventilation cannot be interfered with summer and winter alike. For cold weather, warmth is supplied by means of radiators and heating-pipes, and external roof ventilators carry away the vitiated air from every room and corridor.

The building is mainly of fire-resisting construction, and the works have been executed by Messrs. Joseph Pullan &

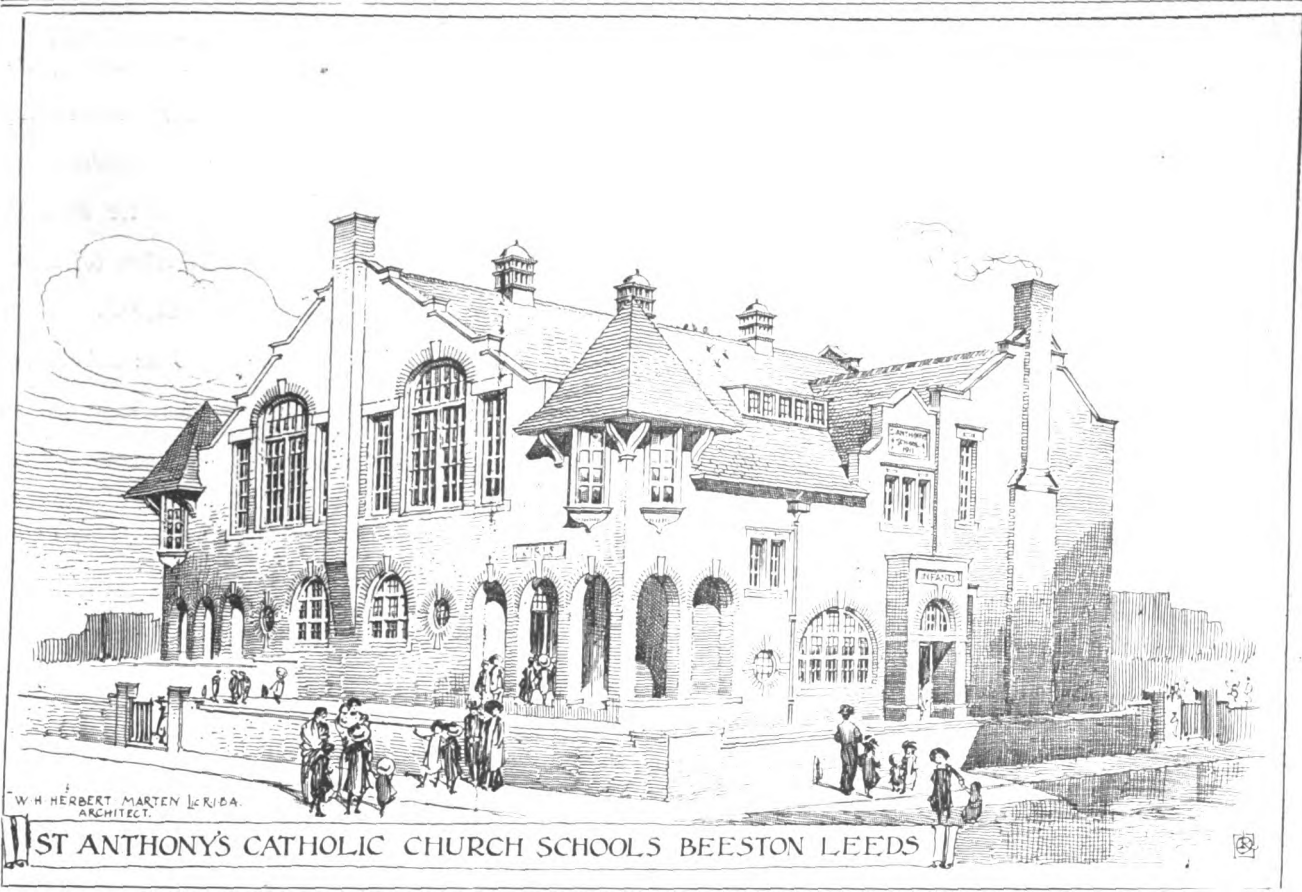
a traceried glass screen with swing door, surmounted by a cross. The main floor of the church is to be of maple boards laid solid on coke breeze and concrete, the walls being of local brick. The ceiling is boarded and broken into panels by the main timbers, and plastering is dispensed with. The whole church is abundantly lighted with large windows of leaded cathedral glass.

The works are being executed by the following contractors, all local firms:—Mr. C. A. Nettleton, masonry and brickwork; Mr. E. Thomas, joiner's work; Mr. J. Hannam, plumber's work; Messrs. A. Calverley & Sons, "Marblite" work; Mr. J. Shepherd, slating and tiling; Messrs. Jessop & Cosgrove, painting, &c.

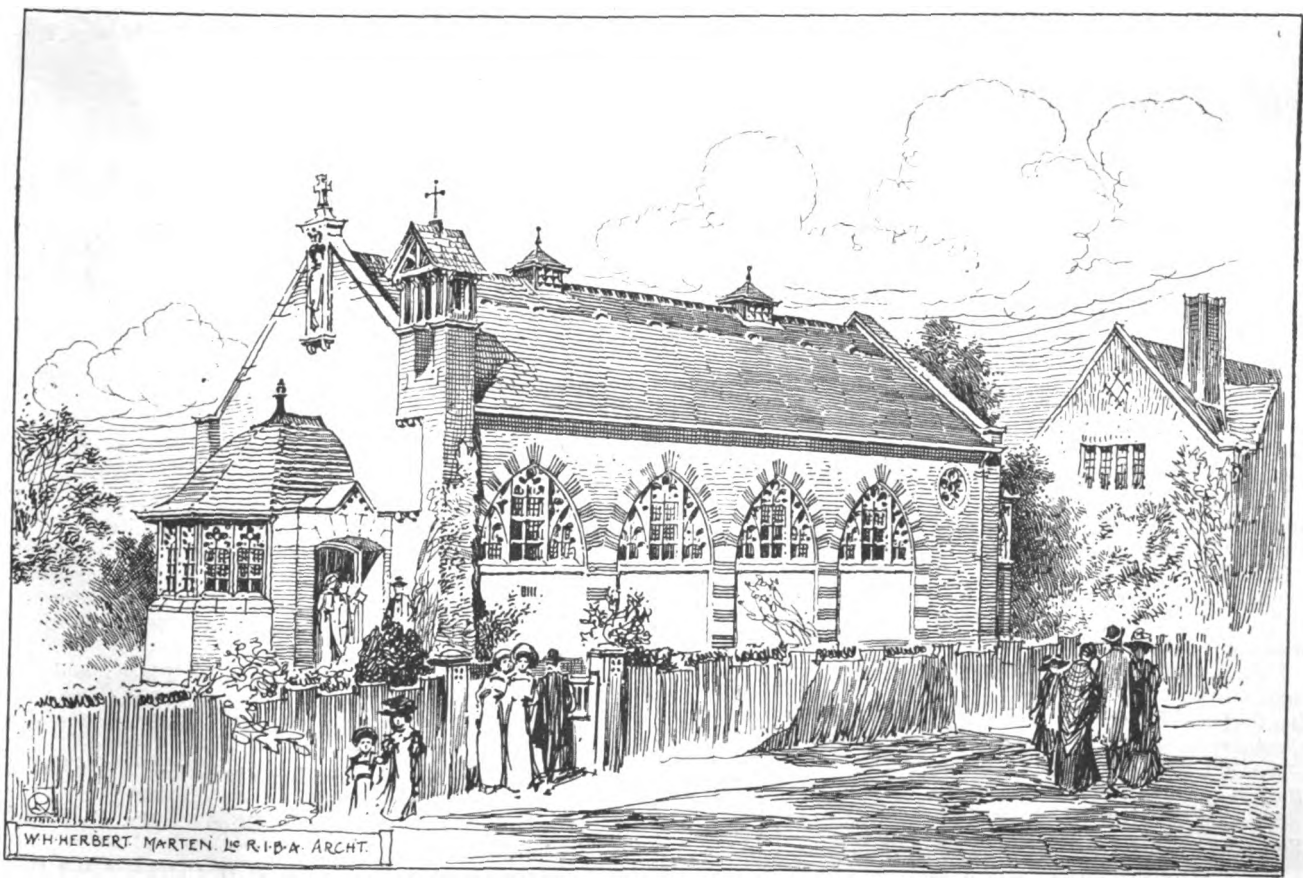
The total cost of the work finished complete (exclusive of furniture) is £723, and it has been carried out from the designs and under the supervision of Mr. W. H. Herbert Marten, Lic.R.I.B.A., Leeds.

THE Lincoln City Council have agreed to purchase thirty acres of land at Fenwick for £7,673 as a site for a refuse destructor.

STARBECK.
that extension of
the main structure
of the church in the
ancel and sacristy
acristy on the side
tribule. The use
of arches in red
wood tracery
the springing of a
can be removed
are required in
any waste. In
th domed roof
tta arch, on the
lady altar and
entrance to the
ch is filled in



ST ANTHONY'S CATHOLIC CHURCH SCHOOLS BEESTON LEEDS



ST. ELRED'S CHURCH, STARBECK.

In the Liverpool building trade the workers have instituted a movement to secure a higher rate of wages for the men engaged in the various departments. Notices to this effect have been sent to the Liverpool Master Builders' Association on behalf of the men. The joiners, who at present receive tenpence per hour, ask for one shilling; the bricklayers, who are paid tenpence, desire a rise of one penny; and the masons, who are paid tenpence per hour, demand one shilling; while slaters ask an increase of one penny on their present wages of ninepence halfpenny per hour.

MR. H. S. GOODHART RENDEL, on behalf of Major E. M. Dunne, has offered the London County Council a rent of £155 a year for a lease for 99 years of a site on the north side of the junction of Dean Trench Street and Tufton Street, Westminster. The site has an area of about 2,379 square feet, with a frontage of about 38 feet to Dean Trench Street. The site has not been submitted to auction, but boards have been erected on which notices have been displayed intimating that the land is to be let. The Improvements Committee recommend that the offer be accepted.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local).

ENGLAND.

CHESHIRE.

Birkenhead.—School, Church Street, Egremont (£4,500).

Workmen's dwellings (£4,200).

Macclesfield.—Conservative Club. Mr. J. E. Burgess, architect.

Stockport.—Elementary school.

CORNWALL.

Truro.—Cathedral School: Boarding House. Mr. F. L. Pearson (of London), architect.

CUMBERLAND.

Biggill.—Council School: extension and improvement.

Frizington.—Vicarage house (£800).

Longtown.—Council School, Blackbank: extension and improvement.

Penrith.—Elementary school.

DERBYSHIRE.

Derby.—Technical College extensions.

DURHAM.

Easington Colliery.—N.E. Railway Station.

South Shields.—Tynemouth Priory Church enlargement.

Mr. A. B. Plummer, F.R.I.B.A., architect.

Willington.—Twelve cottages for the Aged Miners' Homes Committee.

ESSEX.

Chadwell St. Mary.—Teacher's House for Council School.

Mr. F. Whitmore (of Chelmsford), County architect.

Chingford, South.—Infants' Council School.

Ilford.—Cinematograph Theatre, Ilford Lane. Mr. E. T. Dunn, architect.

Mersa, West.—Cookery and Handicraft Centre.

Messing.—Council School.

Romford.—Special instruction Centre for sixty scholars.

Mr. A. S. R. Ley (of London), architect.

Wickford.—Council School.

Witham.—Isolation Hospital.

HAMPSHIRE.

Bournemouth.—Business premises, Old Christchurch Road, for Mr. S. M. Silverman.

House, Carlton Road, for Mr. T. V. D'Esterne.

House, plot 25, Hill Brow Road, for Mr. J. Elcock.

Portsmouth.—Church of St. Alban, Copnor, for 700 sittings (£5,884 accepted tender).

KENT.

Coleman's Hatch.—Holy Trinity Church, Shepherd's Hill.

Faversham.—"Nash Court": additions. Messrs. Pover & Son, architects.

Margate.—Hippodrome, &c. Mr. Bertie Crewe (of London), architect.

LANCASHIRE.

Westhoughton.—School, Bolton Road, for 670 scholars (£10,400).

LEICESTERSHIRE.

Oadby.—U.M. Church and schools.

Walcote.—Congregational Chapel. Messrs. Langley & Baines, A.R.I.B.A. (of Leicester), architects.

LINCOLNSHIRE.

Donington.—Parochial Hall and Reading-room.

Cleethorpes.—Council School. Messrs. Scorer & Gamble, A.A.R.I.B.A. (of Lincoln), architects.

Potterhanworth.—Four cottages: re-construction for Smith's Charity.

Spalding.—Thirty-six working-class cottages. (Accepted tender of £5,176.)

Thornton-le-Fen.—Council School alterations.

MIDDLESEX.

Uxbridge.—Twelve cottages, Windmill Way. Messrs. A. & J. Soutar (of London), architects.

House, Elm Avenue. Mr. F. Osler, A.R.I.B.A. (of London), architect.

House, Kingsend Avenue. Messrs. Allwork Brothers (of Southall), builders.

House, Kingsend Avenue. Messrs. Bunney & Makins, A.A.R.I.B.A. (of London), architects.

House, &c., Field End Road. Messrs. Milsom & Booth (of Pinner), builders.

NORFOLK.

Caistor.—Isolation Hospital extension.

NORTHAMPTONSHIRE.

Kettering.—Art Gallery, Sheep Street, for the U.D.C.

Factory additions, Havelock Street, for the Co-operative Boot and Shoe Society, Ltd.

Factory additions, Rutland Street, for the Kettering Corset Manufacturers.

Two houses, Kingsley Avenue, for the Kettering Industrial Co-operative Society.

House, Rockingham Road: additions for Mrs. F. Henson.

Towcester.—Council houses. Messrs. Marriott (of Rushden), contractors.

Wellingborough.—Workhouse extension (£1,000).

NORTHUMBERLAND.

Bedlington Station.—"Clayton Arms" Inn: re-building. Mr. F. T. Walker, architect.

Newcastle-upon-Tyne.—St. Monica's Church, corner of Wingrove Road and Fenham Hall Drive (£10,000).

Ponteland.—Guardians' children's homes (accommodation for twenty).

NOTTINGHAMSHIRE.

Kirkby-in-Ashfield.—School for 500 places.

OXFORDSHIRE.

Oxford.—Council Schools for 600 places (£7,200).

SHROPSHIRE.

Wellington.—Railway Station alterations.

SOMERSET.

Bridgwater.—Electric Theatre, Eastover. Messrs. Samson & Colthurst, A.R.I.B.A., architects.

STAFFORDSHIRE.

Heath Hayes.—West Staffordshire Unionist Clubhouse (£2,000).

Knutton.—Council infants' school.

Norton Canes.—Council School.

Stoke-on-Trent.—Electricity Department buildings (£2,000).

Tuberculosis dispensary, corner of Victoria and Shirley Roads, Shelton.

Stone.—Factory, Oulton Road: additions for Messrs. Bostock & Co.

West Bromwich.—Post Office.

SUFFOLK.

Ipswich.—G.E.R. Co.'s goods depôt (£50,000).

SURREY.

Croydon.—Baths, Thornton Heath. Mr. G. F. Carter, borough engineer; also

Baths enlargement, South Norwood (£4,000).

Twenty-nine houses, Addiscombe Avenue and Highbarrow Road. Mr. Ernest Bates, A.R.I.B.A. (of London), architect.

Guildford.—Factory, Woodbridge Hill, for Messrs. Dennis Bros.

Surbiton.—St. Mark's Church schools completion (£500).

Woking.—Junior mixed school for 150 places.

SUSSEX.

Bexhill-on-Sea.—House, Warwick Road. Mr. P. D. Stonham (of Eastbourne), architect.

Brighton.—Parish Hall, gymnasium, &c., Hove. Mr. R. F. MacDonald, F.R.I.B.A. (of London), architect.

Eastbourne (Supplementary to 1st inst.).—"Livingstone House" alterations. Mr. C. Simpson, architect.

Mr. M. Hookham (of Eastbourne), contractor.

"Upperton Lodge" alterations. Mr. P. D. Stonham, architect.

"Palgrave Mansions," Devonshire Place: addition. Messrs. Peerless-Dennis & Co., builders; also

"Branksome," Saffrons Road: addition for Mr. W. M. Senior.

Burlington Mews, Seaside: alteration. Mr. A. A. Oakley, architect.

No. 14 Calverley Road: addition. Mr. C. Breach, builder.

House, Dittons Road. Mr. J. D. Clarke, A.R.I.B.A., architect. Messrs. A. W. King & Son, builders.

Garage, Prideaux Road. Mr. A. Ford, architect. Messrs. Miller & Selmes, contractors.

Four houses, Station Road. Mr. A. Chandler, architect. Mr. E. Marchant, builder.

No. 79 South St.: alterations. Mr. Ford, architect.

Haywards Heath.—R.C. School.

Portslade.—Church of England schools: re-construction and enlargement for 600 places (£4,000).

WESTMORLAND.

Windermere.—"The Hoo" for Mr. J. G. Robinson.

WORCESTERSHIRE.

Upton-on-Severn.—Workhouse re-construction.

ENGLAND—continued.

YORKSHIRE.

Birstall.—Council School, Howden Clough.
Bridlington.—House, Belvedere Cliff Parade. Messrs.
 W. S. Walker (F.R.I.B.A.) & Son (of Hull),
 architects.

Twenty-five workmen's dwellings (£4,700).
Cawood.—Wesleyan Chapel: re-building (£1,000). Messrs.
 Monkman & Son (of York), architects. Mr. W. Birch
 (of York), contractor.

Goole.—Hospital: additions and alterations. Messrs.
 Thorp & Turner, architects.

Huddersfield.—Children's Sanatorium.

WALES.

Ffynnon Groew.—Wesleyan Church (£2,500). Mr. P. H.
 Lockwood (of Chester), architect.

Gilfach Goch.—Band Institute and Club. Mr. F. Lewis
 (of Penygraig), architect.

Llandrindod Wells.—Parish Hall.

Llanfyllin.—Drill Hall, &c., for the Montgomeryshire
 Territorial Force Association. Mr. R. W. Davies (of
 Carno, Mont.), architect.

Port Talbot (near).—Cottage Hospital, Aberavon. Mr.
 F. B. Smith, architect.

Ruthin.—Chapel schoolroom, Pendref. Messrs. T. Roberts
 and Co. (of Mold), contractors.

Four workmen's dwellings, Mwrog Street. Messrs.
 Roberts & Owen (of Llansannan), contractors.

Yspitty (near Llanelli).—Mills for the St. David's Tin-
 plate Company.

Ystradgynlais.—Calfaria Chapel.

SCOTLAND.

Milngavie.—Parish (old) church: reconstruction as a hall
 (£1,750).

IRELAND.

Dundrum.—Carnegie Library. Mr. R. M. Butler,
 F.R.I.B.A., M.R.I.A.I. (of Dublin), architect.

Tipperary.—Shanbally Castle: additions and alterations.
 Mr. F. W. Higginbotham (of Dublin), architect.

PATENT SPECIFICATIONS PUBLISHED OCTOBER 31, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House,
 Temple Bar, London.

No. 21,743. Oct. 3, 1911.—J. C. Currah, "Parkhurst,"
 Yarm Road, Stockton-on-Tees. Domestic ranges.

21,847. Oct. 4, 1911.—A. J. Sibley, 235 Maryvale Road,
 Bournville, Birmingham. Apparatus for bending tubes.

22,221. Oct. 9, 1911.—Axel Welin, Hopetoun House,
 Lloyds Avenue, London. Partly communicated from A. P.
 Lundin, 305 Vernon Avenue, Long Island, N.Y. Cranes.

22,317. Oct. 10, 1911.—S. R. & C. Bates, 73 Major Road,
 Stratford New Town, E. Water-raising device.

22,515. Oct. 12, 1911.—H. C. Whitehead, 48 Beedell
 Avenue, Westcliff-on-Sea. Tube or pipe jointing apparatus.

22,551. Oct. 12, 1911.—J. C. T. Todman, Goodgroves,
 Robertsbridge, Sussex. Acetylene gas generating apparatus.

24,872. Nov. 8, 1911.—David Mills, 234 Wandsworth
 Road, South Lambeth, S.W.; Walter Mills, 71 Bromfelde
 Road, Clapham, S.W.; and Geo. Mills, 44 Union Grove,
 Clapham, S.W. Self-contained hot water and like radi-
 ators.

25,194. Nov. 13, 1911.—Alfred Ogram, Central Saw
 Mills, Doncaster Road, Barnsley. Expanding ladder.

25,510. Nov. 16, 1911.—Thomas Coates & M. A. Coates,
 56 Trinity Street, Oldham. Improved scrapers for mortar
 mills.

25,787. Nov. 18, 1911.—S. W. Cramer, Charlotte,
 Mecklenburg, North Carolina, U.S. Regulators for air con-
 ditioning apparatus.

27,586. Dec. 8, 1911.—Emil Schärer, 86 Steinwiess-
 strasse, Zurich. Scaffolding for buildings.

27,865. Dec. 12, 1911.—W. Brandon & Co. and William
 Brandon, 68 Oliver Street, Birmingham. Cooking stoves.

28,857. Dec. 21, 1911.—The Master Builders' Company,
 Ohio, U.S.A. Binding new cement to existing cement or
 like structures.

807. Jan. 10, 1912.—H. Friedmann, 8 Munchenerstr.,
 Berlin. Manufacture of paints.

2,972. Feb. 5, 1912.—Heinrich Bruning, Schopfurt, Ger-
 many. Impregnating wood.

7,397. March 27, 1912.—L. D. Sunderland and C. S.
 Pickles, 20 Bolton Road, Bradford. Roof glazing.

7,459. March 27, 1912.—E. W. Evans, 121 Drakefell
 Road, Brockley, S.E. Controlling the air supply in ap-
 paratus for producing carburetted air gas.

9,926. April 26, 1912.—Edwin Elliott and Anthony
 Bertlin, of H. Elliott & Co., County Bank Chambers, The
 Mall, Ealing. Manufacture of ornamental tiles.

10,213. April 30, 1912.—Albert Giblin, 148 Crossbrook
 Street, Waltham Cross, Herts. Flushing cisterns.

11,804. May 17, 1912.—Hans Hinker, 14 Tempelstr.,
 Innsbruck, Austria. Double window.

12,147. May 22, 1912.—J. L. Warren, 316 Dorchester
 Street East, Montreal. Radiators.

12,307. May 24, 1912.—John Thomas, Tydu Pistill-
 llwyd Isaf, Garnant, Carmarthenshire. Apparatus for ex-
 tinguishing fires in buildings.

12,324. May 24, 1912.—Dr. Phil. Bela Lach, 71 Ungar-
 gasse, Vienna 111. Manufacture of artificial wood.

12,893. June 1, 1912.—F. A. Lane, A. E. Martinsen,
 225 West Forty-fifth Street, N.Y., and C. H. Crawford,
 200 Victor Building, Ninth and Grant Streets, Washington,
 U.S.A. Construction and erection of concrete or other
 walls or structures.

15,928. July 8, 1912.—Date claimed under International
 Convention July 12, 1911. William Partridge, 25 West
 Forty-second Street, New York, and H. D. Gue, 606 Sixth
 Street, Brooklyn, U.S. Methods of finishing or ornamenting
 wood.

16,018. July 9, 1912.—V. V. Ormsby, Chaney Wood-
 ward, Oklahoma, U.S. Windows.

16,753. July 18, 1912.—Chas. Showell, Stirchley Brass
 Foundry, Stirchley, Birmingham, and John Scrivens,
 160 Maryvale Road, Bournville, Birmingham. Spring con-
 trolled doors.

19,885. Aug. 31, 1912.—John Levick, Metal Spinning
 Works, Alma Street, Aston, Birmingham. Means for hold-
 ing and preventing rattling of windows, doors, and the like.

FIRE PREVENTION.

RECENT fires, such as those at Messrs. Barker's, at Messrs.
 Arding & Hobbs', in Moor Lane, &c., should impress upon
 manufacturers, shopkeepers, and warehouse proprietors the
 necessity of adopting systematic fire preventive measures, and
 of keeping themselves posted as to modern safeguards and
 forms of fire preventive organisation and the value of
 obtaining independent technical advice when the occasion
 calls.

The British Fire Prevention Committee, an institution
 of some fifteen years' standing, whilst formerly mainly
 doing work only in the interests of the public authorities,
 has recently placed its valuable reports, publications, "warn-
 ings," and "cautions" at the disposal of the general public,
 so that any Corporation or firm can subscribe to this useful
 service (at a nominal two guineas per annum), and also make
 use of the committee's technical inquiry office.

A number of notable and successful concerns subscribe to
 this service, and we suggest that if the service were more
 widely known the roll of users would soon touch four figures.

It cannot pay any well-managed firm—no matter how
 well insured—to have a fire, owing to the resultant disor-
 ganisation and loss of business, whilst the odium occasioned
 by the loss of life on the premises instils prejudice and takes
 years to wipe out.

The British Fire Prevention Committee's reports already
 number 175. Its activity on the occasion of the Coronation
 may be remembered. It has its own testing-station at
 Regent's Park, and central offices at Waterloo Place. It
 commands the talents and assistance of practically everybody
 who counts on the scientific side of fire prevention, and
 enjoys the confidence of the public departments at home and
 in the Colonies. Its reliability and independence are pro-
 verbial, and a user of its service generally finds the amount
 of work done is remarkable in proportion to the annual sub-
 scription, which is due to the fact that all the technical men
 engaged on the British Fire Prevention Committee work
 voluntarily, and, as a matter of fact, even contribute liberally
 to the cost of the research work done and publications issued.

All inquiries should be addressed to the Assistant Secre-
 tary, British Fire Prevention Committee, 8 Waterloo Place,
 London, S.W.

THE Beverley Corporation have concluded negotiations
 with a view to the establishment of a factory for the manu-
 facture of imitation silk. About fourteen acres have been
 purchased on the banks of the Barmston Drain as a site.
 The new works will employ at the start about 900 hands.

COMPETITION NEWS.

CHORLEY.—Owing to the unusually large number of designs sent in for the new Council School in Duke Street, the Education Committee have agreed to increase the rate of remuneration of the assessor, Mr. J. Brooke, to fifty guineas, plus travelling and out-of-pocket expenses.

INDIA.—The Government of India invite architects and others residing in India to submit by Dec. 7 competitive designs for residences to be erected at Delhi. The designs will be judged by a committee assisted by the Consulting Architect to the Government of India acting as assessor. Premiums aggregating 12,600 rs. are offered for the successful designs, subject to the conditions of competition.

SWANSEA.—The Borough Council have decided to invite competitive plans for a school to be erected at Baptist Well.

WIGAN.—At a meeting of the Education Committee the following tenders were submitted in connection with the appointment of architect for the new girls' high school, in accordance with the terms of the advertisement:—Messrs. Geo. Heaton & Sons, 5 per cent. on the cost of the buildings, plus $\frac{1}{4}$ per cent. for quantities. Messrs. Prescott & Bold, 5 per cent. on the cost of the buildings, plus $\frac{1}{2}$ per cent. for quantities. Messrs. J. B. & W. Thornley, inclusive fee of 5 per cent. on the outlay, made up as follows: $\frac{3}{4}$ per cent. for all preliminary sketches, &c., plus $\frac{1}{2}$ per cent. for bills of quantities. Messrs. Unwin & Holland, 5 per cent. on the cost of the buildings, plus $\frac{1}{2}$ per cent. for quantities. Messrs. W. C. Ralph & Son, 5 per cent. on the cost of the buildings, plus $\frac{1}{2}$ per cent. for quantities. It was resolved that the tender of Messrs. W. C. Ralph & Son, of Wigan, be accepted, and that they be appointed as architects for the proposed new school.

USHER HALL ORGAN, EDINBURGH.

The Lord Provost's Committee of Edinburgh Corporation last week considered the report on the estimates for the Usher Hall organ, submitted by the three experts to whom the matter was remitted—Sir Frederick J. Bridge and Sir George C. Martin, London, and Mr. Thomas H. Collinson, Edinburgh.

The report was as follows:—We have carefully examined the specifications and offers sent to the Town Clerk, Edinburgh, for the building of the organ for the Usher Hall, in response to advertisement by him, from the following offerers (arranged alphabetically), viz.:—

J. J. Binns, Bramley, Leeds; Bishop & Son, 20 Upper Gloucester Place, London, N.W.; Brindley & Foster, Sheffield; Evans & Barr, Ltd., Belfast; Forster & Andrews, Hull; Harrison & Harrison, Durham; William Hill & Son, 372 York Road, Camden Road, London; Ingram & Co., Edinburgh; Jardine & Co., Ltd., Old Trafford, Manchester; E. H. Lawton, Aberdeen; Lewis & Co., Ltd., 234 Ferndale Road, Brixton Road, London, S.W.; Morgan & Smith, Ltd., Hove, Brighton; Norman & Beard, Ltd., 61 Berners Street, London, W.; Rushworth & Dreaper, Liverpool; Scovell & Co., Ltd., Edinburgh; Stephen Taylor & Son, Leicester.

Having had before us the general conditions of specification and relative plan referred to in the advertisement, and having met together and discussed the above specifications, we hereby recommend the Lord Provost, Magistrates, and Council of Edinburgh to accept the tender of Messrs. Norman & Beard, Ltd., at the sum of £3,500, whom failing, we recommend in the second place the schemes of Messrs. Harrison & Harrison and Messrs. Hill & Son, as of equal value, with the observation that that of Messrs. Harrison & Harrison is more suited to concert purposes.

The Town Council have adopted the report and will accept the tender of Messrs. Norman & Beard, Ltd., London.

VARIETIES.

The London County Council on Tuesday approved the appointment of Mr. George William Humphreys, M.Inst.C.E., as the Chief Engineer of the Council, at a salary of £2,000 a year.

Mr. C. S. SPOONER, F.R.I.B.A., London, has prepared the plans for the church about to be erected at Aldersbrook, near Wanstead. The first portion of the work is estimated to cost £4,000.

MESSRS. WALSH & NICHOLAS, architects, Halifax, have prepared plans for a church to be erected at Siddal, Yorks, at a total cost of £8,460. The work will be carried out in two sections, the first involving an outlay of about £3,000.

The Education Committee of the London County Council recommend that an elementary school for 1,024 children should be erected on the site in the neighbourhood of Harrow Road, Paddington, N., which was purchased a few months ago.

The time allowed the London County Council for the completion of the works authorised by the County Office Site (London) Act, 1906, will expire in 1913. It is proposed to seek Parliamentary authority for an extension of five years for the completion of the new County Hall.

The Council of College Hall, founded to meet the need for a hall of residence for women students of university rank in London, propose to acquire a site and erect a new building at a cost of £30,000, towards which £8,400 has been promised or received.

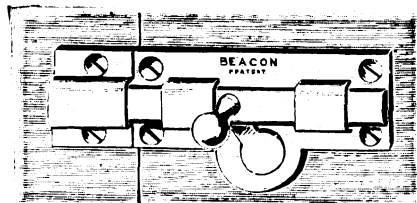
PARTICULARS have been issued of the scheme of competition for the scholarship in decorative painting at the British School at Rome, offered by the Commissioners for the Exhibition of 1851. The scholarship will be of the value of £200 per annum, and will be ordinarily tenable for three years. Candidates must be British subjects, and less than thirty years of age on July 1, 1913. The competition, which will be conducted by the Faculty of Painting of the British School at Rome, will be in two stages: (a) An open competition, and (b) a final competition, open to not more than four candidates selected from those competing in the open examination.

MR. B. T. BATSFORD will publish in a few days Mr. L. A. Shuffrey's long-promised work on "The English Fireplace and its Accessories from the Earliest Times to the Nineteenth Century." He will also issue "Old Houses and Village Buildings in East Anglia," by Basil Oliver, A.R.I.B.A., forming the fifth volume of his well-known "Old Cottage" series. Both volumes will be fully illustrated by collotype reproductions of photographs of the most interesting examples, accompanied by numerous sketches and measured drawings.

THE Ashton-under-Lyne Board of Guardians have received a letter from the Local Government Board stating that attention had been called to the practice of the Guardians of restricting tenders to persons living in the union. In the interests of the ratepayers, the letter continued, the Guardians should abandon the practice. The regulations provided that forms of tender should be supplied by the Clerk to any person requiring them, and the Board were of opinion that tenders on the prescribed form should be received and considered by the Guardians. If the Guardians refused to receive and consider tenders from persons outside the union, the provision would be inoperative. The Board further pointed out that it was not to be inferred from the fact that advertisements appeared in papers in the union that it restricted tenders to persons having business or living in the union.

TRADE NOTES.

MESSRS. SMITH & DAVIS, LTD., of Beacon Works, Hampton Street, Birmingham, are placing upon the market their patent Beacon indicating door bolt, by which it is possible at a glance to see whether the room is vacant. The bolt is very simple, it is easily fixed, and cannot easily get out of



order. Another valuable patent the firm have on the market is their Beacon patent sash lift. By the use of this patent lift, it is claimed, there are no more torn curtains or blinds.

THE "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Palace Theatre, Westcliff-on-Sea.

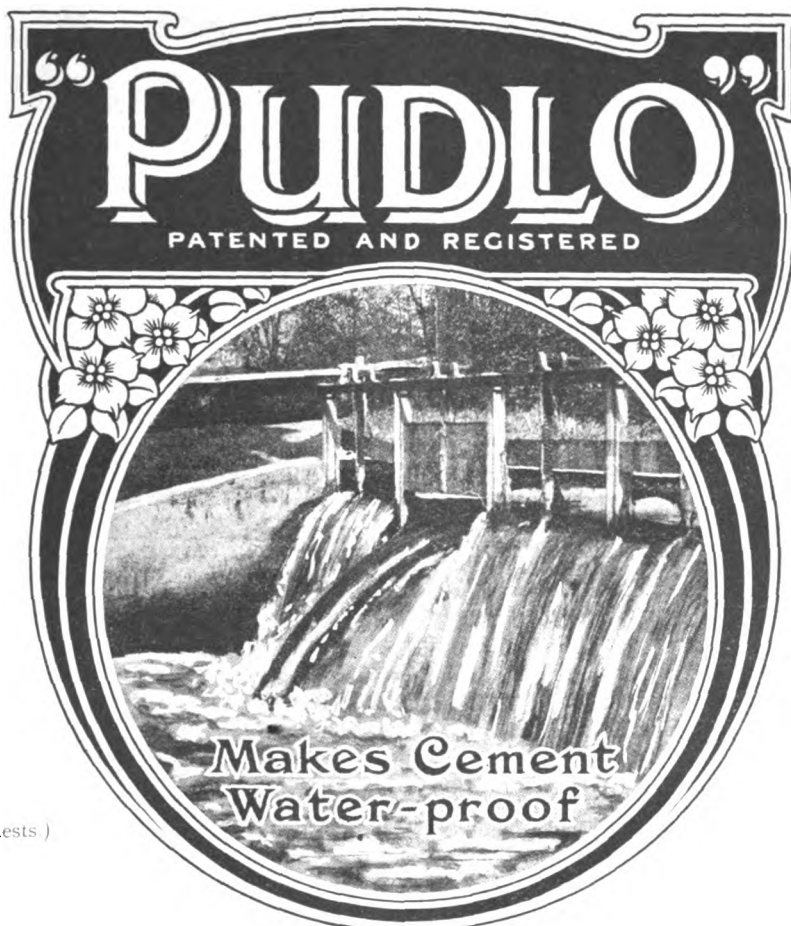
MR. F. J. BARNES, of Portland, Dorset, informs us that the Portland stone required for facing the fronts of the new Waterloo Station is being obtained from his quarries. Amongst other London contracts supplied from the same quarries are the Tower Bridge; Waring's new premises, Oxford Street; new Polytechnic, Upper Regent Street; Piccadilly Hotel, and Lloyd's Bank, St. James's Street.

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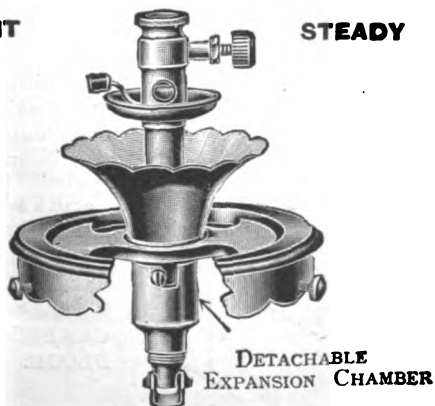
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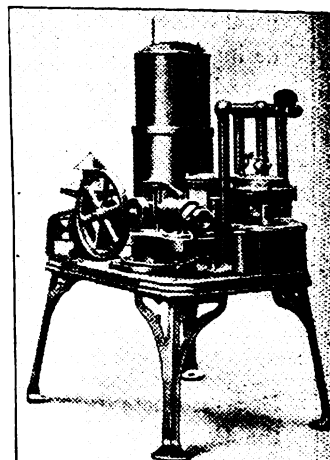
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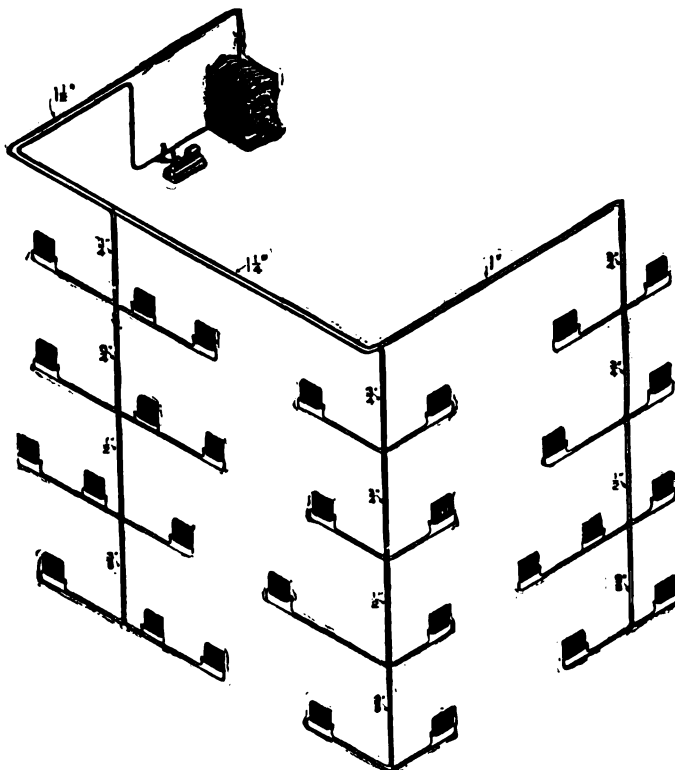
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THE Architect and Contract Reporter.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

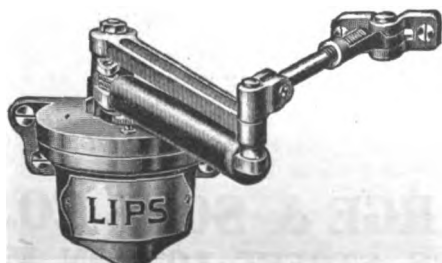
BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie—Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

(Continued on page 7.)

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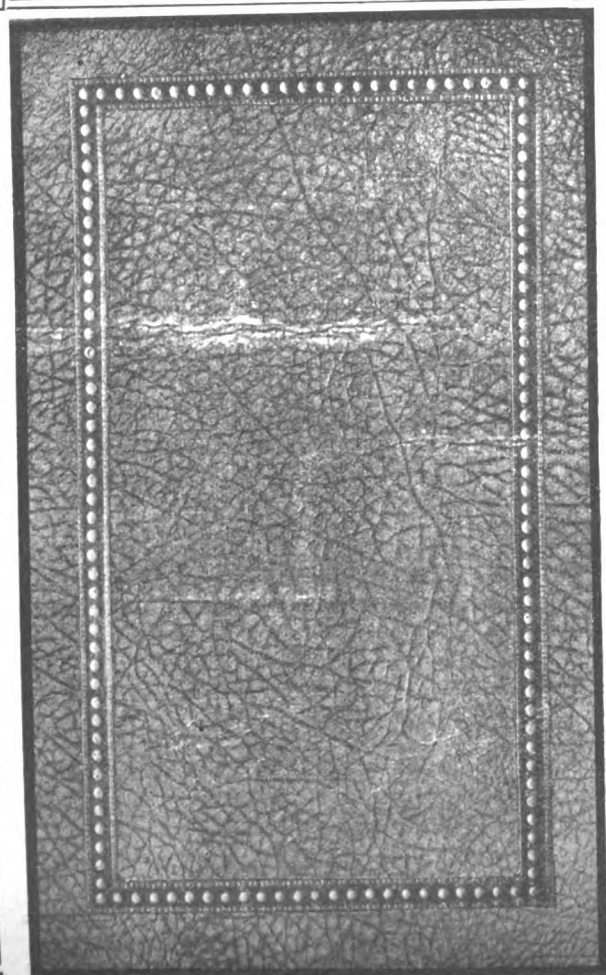
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CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

SHEFFIELD.—Nov. 23.—The Guardians of Ecclesall Bierlow Union invite plans for a temporary hospital to be erected at the workhouse to accommodate twenty-four beds, with administrative quarters, dayroom, &c. The ordinary rate of commission will be paid in respect of the plan which is accepted, and no financial liability will be undertaken for rejected plans. Mr. J. E. Moulding, clerk, Union Offices, The Edge, Sheffield.

CONTRACTS OPEN.

BEARPARK.—Nov. 19.—For alterations at the Council School, for the Durham County Council. Messrs. Clark & Moscrop, architects, Feethams, Darlington.

BLACKPOOL.—Nov. 20.—For the erection, execution and completion of the following works, viz.: (1) Proposed extension to Marton car shed; (2) proposed additional stores and workshops adjoining Blundell Street tram shed. Mr. J. S. Brodie, borough engineer and surveyor, Municipal buildings, Market Street, Blackpool.

BLACKWOOD.—Nov. 30.—For five houses and shops at Blackwood, Mon. Mr. R. L. Roberts, M.S.A., Abercarn.

BRISTOL.—Nov. 26.—For erection of the Bristol labour exchange and probate registry. Deposit £1 1s. Mr. F. A. Huntley, H.M. Office of Works, Bristol, and H.M. Office of Works, &c., Storey's Gate, London, S.W.

BROWNEY.—Nov. 19.—For alterations at the Council School, for the Durham County Council. Messrs. Clark & Moscrop, architects, Feethams, Darlington.

BYERS GREEN.—Nov. 19.—For erection of a Council School (for about 500 scholars), for the Durham County Council. Mr. H. A. Carry, architect, 3 Bigg Market, Newcastle-upon-Tyne.

CAISTOR.—Nov. 21.—For the erection of cottages in their area (up to sixty in number) to be built in blocks of two, for the Rural District Council. Mr. A. A. Padley, clerk, Council Offices, Caistor.

CASTLETOWN.—Nov. 19.—For alterations and improvements at the Council School, for the Durham County Council. Mr. N. Richley, Shire Hall, Durham.

CHORLEY.—Nov. 20.—For the erection of a skin-cleaning room, &c., at the public slaughter-houses, for the Corporation. Deposit 10s. 6d. The Borough Surveyor's Office.

CHORLEY WOOD.—Nov. 25.—For the erection and completion of a County Council School. Deposit £2 2s. Mr. Urban A. Smith, county surveyor, Hatfield, Herts.

DEWSBURY.—Nov. 20.—For the various works required in erection of a dwelling-house in Northfield Road West. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, surveyors and valuers, Market Place, Dewsbury.

FEATHERSTONE.—Nov. 22.—For the following works, for the West Riding Education Committee: Featherstone, North Featherstone Lane Council School alterations (builder and joiner). The Education Architect, County Hall, Wakefield.

FOLKTON.—Nov. 27.—The Sherburn Rural District Council invite tenders for the following contracts, in connection with the waterworks:—Contract No. 1: The supply and erection of an oil engine in substitution of horse-driven gear. Contract No. 2: The construction of an engine-house. Mr. W. Plewes, Bridlington Street, Hunmanby.

GRANTOWN-ON-SPEY.—Nov. 25.—For the mason, carpenter, plumber, slater, plaster, painter, and steel works in connection with extensive additions to the Palace Hotel. Mr. R. B. Pratt, A.R.I.B.A., architect, 110 High Street, Elgin, and at the hotel.

GRIMSBY.—Nov. 19.—The Education Committee invite tenders for the pulling down and the highest price for purchasing and removal of the whole of the materials arising from taking down the present buildings, viz.: 426 to 436 inclusive, fronting Victoria Street North, together with the slaughter-houses and outbuildings at the back, and No. 281, fronting Lower Burgess Street. Mr. Herbert C. Seaping, architect, Grimsby.

HIGHER BEBINGTON (CHESHIRE).—Nov. 21.—For elementary school at Higher Bebington (accommodation 400), for the Administrative Sub-Committee for Education for Bebington and Neston area. Deposit £1 1s. Mr. H. Grayson, F.R.I.B.A., M.A., architect, Royal Liver Building (sixth floor), Liverpool.

HULL.—Nov. 27.—For builders' and ferro-concrete work required in the construction of stores and workshop and in alterations to existing buildings at the power station, Osborne Street. The ferro-concrete work is to be carried out by an experienced firm to the city engineer's design. Deposit 10s. Mr. A. E. White, M.Inst.C.E., city engineer, Guildhall, Hull.

IRELAND.—Dec. 4.—For erection and furnishing of National school buildings at St. Columba's (Ballyheerin), county Donegal. The Office of Public Works, Dublin, and Rathmullen Coastguard Station, county Donegal.

LEPTON.—Nov. 21.—For the various works required in erection of a church institute at Lepton, near Huddersfield. Messrs. J. B. Abbey & Son, 34a New Street, Huddersfield.

LONDON.—Nov. 21.—For erection of a branch library building in Northwold Road, Upper Clapton, N.E., for the Hackney Borough Council. (Mr. E. Cooper, F.R.I.B.A., 4 Verulam Buildings, Gray's Inn, W.C.) Send £2 2s. deposit to Mr. W. A. Williams, town clerk, Town Hall, Hackney, N.E.

LONDON.—Nov. 25.—For erection of new mason's yard, Dean Bradley Street, Millbank, S.W., for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. H. A. Collins at H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Dec. 12.—For alteration and extension of the receiving wards at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union. Deposit £2. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

MANCHESTER.—Nov. 27.—For the work required in alterations to boiler house No. 2 and reconstruction of main flue at their Stuart Street generating station, for the Electricity Committee. Deposit £1 1s. Mr. F. E. Hughes, secretary, Electricity Department, Town Hall, Manchester, and Messrs. C. S. Allott & Son, civil engineers, 46 Brown Street, Manchester.

MORLEY.—Nov. 23.—For the various works required in erection of additional premises at Wesley Street Mills, for Messrs. C. Scarth & Sons, Ltd. Mr. T. A. Buttery, Lic.R.I.B.A., architect, Queen Street, Morley, and 1 Basinghall Square, Leeds.

NEW HUNSTANTON.—Dec. 4.—For erection of shelters at the foot of the Green. Mr. J. S. B. Glasier, clerk, the offices of the Council, Greengate Road, New Hunstanton.

NORTH ANSTON.—Nov. 16.—For proposed working-men's club. Deposit £1 1s. Mr. J. W. Winter, architect and surveyor, St. Peter's Close, Sheffield.

NORTH SHIELDS.—Nov. 23.—For structural alterations to the buildings recently occupied by children at the union workhouse, 50 Preston Road, for the purpose of fitting them for infirm inmates, for the Guardians of Tynemouth Union. Mr. W. Stockdale, A.R.I.B.A., architect, 81 Howard Street, North Shields.

OAKENSHAW.—Nov. 19.—For erection of a Council School (for about 400 scholars), for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

OLDHAM.—Nov. 20.—For the builders' work required in erection and completion of a number of lock-up shops adjoining the Victoria Market Hall, for the Markets Committee. The Borough Surveyor's Office, Oldham.

OSWALDTWISTLE.—Dec. 3.—For erection of an elementary school to accommodate 268 children, for the Lancashire Education Committee. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

PELLON.—Nov. 27.—For the various works required in extension to foundry at Pellon, Halifax. Messrs. Jackson & Fox, Rawson Street, Halifax.

PORTSMOUTH.—Nov. 22.—For works to be done and materials to be supplied in constructing cabmen's shelter and public convenience on the west side of Unicorn Road, next the railway gates. The Borough Engineer's Office, Town Hall, Portsmouth.

PORTSMOUTH.—Nov. 26.—For erection, completion, and maintenance for six months of the following works, viz.: (1) Erection of twenty-two houses on the west side of Curzon-Howe Road, Portsea (section X); (2) erection of seventeen houses on the east side of Curzon-Howe Road, and four houses in Kent Street, Portsea, together with a wall and iron fence (section Y), for the Town Council. Deposit £2 2s. The Borough Engineer's Office, Town Hall, Portsmouth.

ROCHDALE.—Nov. 23.—For the following works, for the Parks Committee: (a) Bandstand (steel and wood) for Falinge Park; (b) shelter and bowl house for Buersil bowling green. Mr. P. W. Hathaway, A.R.I.B.A., Town Hall, Rochdale.

ROCHFORD.—Nov. 16.—For erection of an aged and infirm block at the workhouse, Rochford, Essex. Mr. Walter J. Wood, architect, 26 Alexandra Street, Southend-on-Sea.

ROMFORD.—Nov. 21.—For erection of a cart shed and paving of the stable yard at the town yard, Market Place. Mr. H. T. Ridge, Council Offices, Romford.

ST. DENNIS.—Nov. 23.—For erection of a house and bakery at St. Dennis, Cornwall, for Mr. S. Kestle. Mr. B. C. Andrew, M.S.A., architect, St. Austell.

SALISBURY.—For taking down the greater part of Derby Court, Milford Hill. Messrs. J. Harding & Son, architects and surveyors, 58 High Street, Salisbury.

SCOTLAND.—Nov. 20.—For store to be erected at Brodie Station, for the Forres and District Farmers' Association, Ltd. Mr. J. MacLaren, 7 Culbard Street, Elgin.

SCOTLAND.—Nov. 22.—For the reconstruction of the Stinchard Bridge, Pinwherry: (1) by a reinforced concrete bridge; (2) by a steel girder bridge with concrete abutments, for the Garrick District Committee of the County Council of Ayrshire. Mr. R. Moir, road surveyor, Maybole.

SCOTLAND.—Nov. 25.—For supply and erection of corrugated iron shed, &c., at Ward Road workshop, for the Dundee Water Commissioners. Mr. G. Baxter, M.I.C.E., engineer and manager, 93 Commercial Street, Dundee.

SHREWSBURY.—Nov. 18.—For the reconstruction of Dawley, Pool Hill, Council School, for the Salop County Council. Send names by Nov. 18 to Mr. H. E. Wade, secretary, Elementary Education Department, County Buildings, Shrewsbury.

STAINES.—Nov. 18.—For erection of a small sanitary convenience. Mr. E. J. Barrett, A.M.I.C.E., engineer and surveyor, Town Hall, Staines.

SWALLOWFIELD.—Nov. 20.—For erection of a pair of cottages at Riseley, for the Swallowfield Parish Council. Mr. W. Yeo, jun., clerk, Riseley, Swallowfield, Berks.

TONBRIDGE.—Dec. 19.—For the erection of a Council School at Sussex Road, to accommodate 400 scholars, and other buildings. (Mr. W. H. Robinson, M.S.A., county education architect.) Send applications and £1 deposit by Dec. 4 to Mr. Fras. W. Cook, secretary of the Kent Education Committee, Caxton House, Westminster, S.W. (See advertisement.)

WALES.—For erection of 100 houses on the Rhubina Garden Suburb, near Whitchurch, Cardiff. Deposit £2 2s. The Housing Reform Co., Ltd., 3 and 4 Park Place, Cardiff.

WALES.—For the rebuilding of the Rose and Crown Inn, Rhosamman, Carm. Mr. J. C. Rees, M.S.A., Parade Chambers, Neath.

WALES.—Nov. 18.—For erection of stables, coach-house, stores, &c., at Resolven, Neath, for the Resolven Co-operative Society. Mr. J. C. Rees, M.S.A., Parade Chambers, Neath.

WALES.—Nov. 20.—For the construction of a live stock market at Sloper Road, Cardiff, for the Corporation. The City Engineer's Office, City Hall, Cardiff.

WALES.—Nov. 26.—For carrying out additions and alterations to the workhouse infirmary at Valley, for the Guardians

of Holyhead Union. Mr. J. Hughes, architect, Penybont, Valley.

WALES.—Dec. 7.—For erection of the Eisteddfod pavilion, to accommodate 14,000 people, in Bailey Park, Abergavenny, for the Eisteddfod Frenhinol Genedlaethol Cymru, y Fenni, 1913. Mr. B. J. Francis, architect, Linden House, Abergavenny.

WEDNESBURY.—Nov. 21.—For alteration of premises in the Market Place, known as 30 and 31, into institute buildings, for the Foresters' Institute. Messrs. Scott & Clark, architects, Lower High Street, Wednesbury.

WINCHESTER.—Nov. 18.—For retiling and reslating the roof of the County Hall, for the Hampshire County Council. Deposit £1 1s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

TENDERS.

BEXHILL.

(Contract No. 1) for construction of storm-water overflow across foreshore, 30-inch diameter; (No. 2) for enlargement of brick culvert to 4 feet by 1 foot 8 inches; (No. 3) for storm-water sewer, 18-inch diameter; (No. 4) for extension of storage tanks. Mr. G. Ball, A.M.I.C.E., borough surveyor, Bexhill.

Contract No. 1.

Peerless, Dennis & Co.	£1,672 0 0
Johnson, Son & Marsh	1,360 17 10
S. CAREY, Bexhill (accepted)	1,256 5 3
Wood	1,190 13 7

Contract No. 2.

Wood	938 7 3
Johnson	931 14 9
Peerless, Dennis & Co.	872 0 0
S. CAREY (accepted)	807 1 11

Contract No. 3.

Wood	699 2 3
S. CAREY (accepted)	653 15 8
Peerless, Dennis & Co.	637 0 0
Johnson	630 16 3

Contract No. 4.

Johnson	1,381 4 0
Peerless, Dennis & Co.	1,355 0 0
S. CAREY (accepted)	1,333 9 8
Wood	1,226 9 7

BUGLAWTON.

For erection of a chancel end and vestries, and for alterations to the nave of the parish church. Messrs. A. PRICE & SON, architects, Sandbach.

Rathbone & Sons	£1,435 0 0
J. & N. Mills & Co.	1,266 10 0
Clayton Bros.	1,148 0 0
Huxley	1,120 0 0
S. JACKSON, LTD. (accepted)	1,037 12 6

GRAVESEND.

For erection of an additional building to the vagrant wards at the workhouse, for the Guardians of Gravesend and Milton Union. Mr. E. J. BENNETT, A.R.I.B.A., architect, 10 Gray's Inn Square, W.C., and Gravesend.

Clarke & Epps	£997 0 0
Martin	769 0 0
Friday & Ling	750 0 0
Ellingham	747 0 0
Milton Bros.	698 15 0
Lingham & Etherington	697 0 0
Archer & Son	687 0 0
Multon & Wallis	647 0 0
Tong, Gravesend (provisionally accepted)	616 10 0

LONDON.

For the enlargement of the L.C.C. school in Daniel Street, Bethnal Green.

Rowley Bros.	£6,794 0 0
Woodward & Co.	6,739 0 0
C. P. Roberts & Co.	6,600 0 0
F. & T. Thorne	6,588 0 0
Williams & Son	6,375 0 0
Wall, Ltd.	6,200 0 0
Chessum & Sons	6,116 15 1
Lawrance & Sons	6,104 0 0
J. & C. BOWYER, LTD., Upper Norwood (accepted)	5,867 0 0

LONDON—continued.

For the erection of new elementary school, the "Ravensbourne," Deptford.

Kirk & Randall	£14,855	0	0
Leng	14,697	0	0
Holloway	14,502	0	0
Johnson & Co.	14,451	0	0
Leslie & Co.	14,348	16	6
Thomas & Edge	14,130	0	0
J. & C. Bowyer	13,839	0	0
HOLLIDAY & GREENWOOD, LTD., Brixton (accepted)	12,764	0	0

For alterations consequent upon re-organisation at the L.C.C. school in Tottenham Road, Hackney.

C. P. Roberts & Co.	£1,896	0	0
Marchant, Hirst & Co.	1,846	0	0
King & Son	1,624	0	0
Lenn, Thornton & Co.	1,575	0	0
Rowley Bros.	1,560	0	0
Williams & Son	1,552	0	0
Stevens & Sons	1,531	0	0
L. H. & R. Roberts	1,529	0	0
McCORMICK & SONS, LTD., Northampton Street (accepted)	1,432	0	0

For the erection of a new central school for the L.C.C. in Wilton Road, Hackney.

W. E. Blake, Ltd.	£11,359	13	10
Johnson & Co.	11,124	0	0
L. H. & R. Roberts	10,957	0	0
Lawrance & Sons	10,851	0	0
Brand, Pettit & Co.	10,829	0	0
Godson & Sons	10,644	0	0
Lawrence & Son	10,584	0	0
J. CHESSUM & SONS, 7A South Place (accepted)	10,134	14	9

For the enlargement of the "Craven Park" L.C.C. school, Hackney.

Stevens & Sons	£2,019	0	0
Rowley Bros.	1,908	0	0
Chessum & Sons	1,891	10	4
Lawrence & Son	1,828	0	0
McCormick & Sons	1,827	0	0
Patman & Fotheringham	1,823	0	0
C. P. Roberts & Co.	1,811	0	0
Williams & Son	1,799	0	0
L. H. & R. Roberts	1,795	0	0
A. Roberts & Co.	1,756	0	0
Brand, Pettit & Co.	1,733	0	0
LAWRANCE & SONS, LTD., 15-16 Wharf Road (accepted)	1,714	0	0

For adaptation of the ground floor for elementary school purposes at the County secondary school, South Hackney.

Silk & Son	£790	0	0
Griggs & Son	770	0	0
Mason & Co.	754	0	0
Horswill	733	0	0
Brand, Pettit & Co.	578	0	0
W. REASON, 47 Rosebery Avenue (accepted)	573	0	0

For the enlargement of the L.C.C. school in Upper Hornsey Road, Islington.

A. Roberts & Co.	£2,378	0	0
McCormick & Sons	2,365	0	0
Reason	2,299	0	0
Bovis, Ltd.	2,267	0	0
Chessum & Sons	2,262	16	9
McLaughlin & Harvey	2,259	0	0
L. H. & R. Roberts	2,252	0	0
Brand, Pettit & Co.	2,230	0	0
C. P. ROBERTS & CO., LTD., Dalston (accepted)	2,129	0	0

For the re-building of the L.C.C. school in Victory Place, Walworth.

Smith & Son	£15,441	0	0
Parker & Sons	15,130	0	0
Thomas & Edge	14,937	0	0
F. & H. F. Higgs	14,929	0	0
Garrett & Son	14,858	0	0
Johnson & Co.	14,749	0	0
The General Building Co.	14,748	0	0
Downs	14,666	0	0
Appleby & Sons	13,885	0	0
J. & C. Bowyer	13,873	0	0
HOLLIDAY & GREENWOOD, LTD., Brixton (accepted)	13,691	0	0

LONDON—continued.

For the enlargement of the L.C.C. school in Brunswick Street, South Haggerston.

C. P. Roberts & Co.	£1,370	0	0
Brand, Pettit & Co.	1,356	0	0
E. LAWBRANCE & SONS, 16 Wharf Road (accepted)	1,304	0	0

For the erection of a new school for mentally defective and physically defective children, High Street, Shadwell.

Rice & Son	£8,055	0	0
Symes	7,957	12	8
Chessum & Sons	7,917	0	0
F. & T. Thorne	7,876	0	0
Perry & Co. (Bow)	7,729	0	0
C. P. Roberts & Co.	7,573	0	0
LOLE & CO., Chelsea (accepted)	7,408	19	4

For the erection of new M.D., P.D. and Deaf school in Tollit Street, Mile End.

Todd & Newman	£19,131	0	0
F. & T. Thorne	18,930	0	0
C. Wall, Ltd.	17,779	0	0
Johnson & Co.	17,739	0	0
Godson & Sons	17,473	0	0
Perry & Co. (Bow)	17,432	0	0
Wallis & Sons	17,244	0	0

PATMAN & FOTHERINGHAM, LTD., Park Street, Islington (accepted)

For the erection of a new school in Caldecott Road, Norwood.

W. E. Blake, Ltd.	£18,482	15	0
Garrett & Son	18,315	0	0
Johnson & Co.	17,899	0	0
Holliday & Greenwood	17,734	0	0
Godson & Sons	17,693	0	0
Foster & Dicksee	17,569	0	0
Appleby & Sons	17,482	0	0
F. & T. Thorne	17,395	0	0
Parker & Sons	17,358	0	0
Wallis & Sons	17,270	0	0
Galbraith Bros.	17,066	19	0
F. & H. F. Higgs	17,063	0	0
Longley & Co.	16,953	0	0

J. & C. BOWYER, LTD., Upper Norwood (accepted)

For the erection of the Furzedown Training College and Hostels, for the L.C.C., at Wandsworth.

Downs	£54,324	0	0
F. & H. F. Higgs	52,940	0	0
Pattinson & Sons	52,580	0	0
J. & C. Bowyer	51,853	0	0
E. Lawrance & Sons	51,731	0	0
Johnson & Co.	51,440	0	0
Holliday & Greenwood	49,973	0	0
W. Lawrence & Son	49,724	0	0
F. & T. THORNE, Isle of Dogs (accepted)	47,638	0	0

For installing heating apparatus in connection with the re-building of the Ricardo Street school, Poplar, for the L.C.C.

J. Grey, Ltd.	£1,080	0	0
Christie	875	0	0
Harlow & Son	870	16	0
Brightside Foundry and Engineering Co.	853	0	0
Hayward Bros. & Eckstein	845	17	6
A. MACINTOSH & SONS, LTD., Cambridge (re- commended)	788	5	6
Architect's estimate	825	0	0

For the adaptation of a part of the mansion at Golder's Hill for use as a residence for the superintendent.

Godson & Sons	£297	0	0
Rowley Bros.	285	0	0
Mather	270	0	0
Marchant, Hirst & Co.	245	10	0
Grover & Son	243	12	0
STEVENS & SONS, Crouch Hill, N. (recom- mended)	237	10	0
Architect's estimate	240	0	0

For the erection of a bandstand-shelter at Springfield Park.

Newell	£377	0	0
Harding & Son	375	10	0
Godson & Sons	356	0	0
John C. Mather	323	0	0
MARCHANT, HIRST & CO., Kentish Town (re- commended)	293	0	0
Architect's estimate	269	0	0

PORTSMOUTH.

For erection of a public elementary school at North End, for the Education Committee. Mr. J. W. WALMISLEY, F.R.I.B.A., architect, Southsea.

Bevis	£20,764	0	0
Wakham	20,600	0	0
Corke	20,470	0	0
Croad	20,236	0	0
Springs	20,020	0	0
Crockerell	19,763	0	0
Evans	19,750	0	0
Salter	19,577	0	0
Jones	19,462	0	0
Cobbett	19,399	0	0
Privett	18,972	0	0
J. TANNER, Southsea (accepted)	18,890	0	0

SCOTLAND.

For the various works required in connection with the erection of Finnart School, for the Greenock School Board. Mr. W. R. GLEN, architect, Glasgow.

Accepted tenders.

James Parker, Glasgow, mason.
William Gibson, Paisley, joiner.
D. Phillips & Son, Greenock, slater.
James Sommerville, Govan, plumber.
D. & J. M'Kenzie, Glasgow, plasterer.
J. Graham, Greenock, glazier.
James Boyd & Sons, Paisley, heating.
R. Brown & Sons, Paisley, tilework.
Kennedy, Stark & Co., Glasgow, electric lighting.
P. M'Kerracher, Glasgow, painter.
Bryden & Middleton, Glasgow, railings, &c.
Bennet Furnishing Co., Glasgow, furniture.
Fleming Bros., Glasgow, steel.

Total of accepted tenders £15,912 4 6

WALTHAMSTOW.

For alterations and additions to Joseph Barrett schools, for the Walthamstow Education Committee. Mr. H. PROSSER, M.S.A., architect. Quantities by Mr. G. W. FRANCIS.

Mason & Co.	£3,838	0	0
Knight & Son	2,530	0	0
Sands	2,490	0	0
Coxhead	2,487	0	0
J. & J. Dean	2,398	0	0
Maddison	2,310	0	0
Horswill	2,275	0	0
Whiter & Co.	2,258	0	0
BRAND, PETTIT & Co., Tottenham (accepted)	2,254	0	0

WANSTEAD.

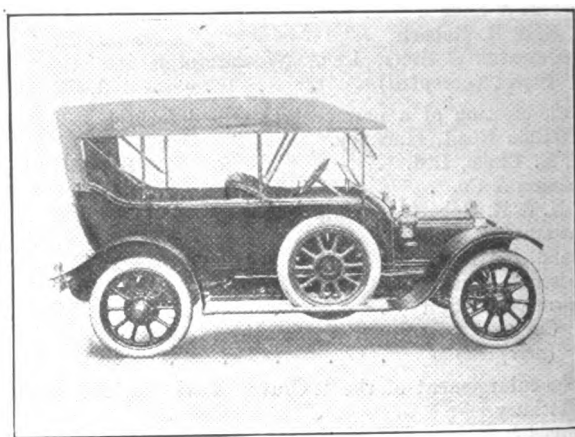
For erection of a fire brigade station in Wanstead Place, at the corner of Fitzgerald Avenue. Mr. C. H. BRESSY, F.S.I., surveyor, Wanstead, N.E.

Simms & Wood	£1,546	0	0
Brand & Pettit	1,278	0	0
A. Newman, Ltd.	1,180	0	0
Robins	1,170	0	0
Horswill	1,170	0	0
Davey & Armitage	1,125	0	0
J. & G. Dean	1,110	0	0
Jolliffe	1,100	0	0
Symes	1,097	0	0
Fox	1,090	0	0
Clemens Bros.	1,067	10	0
Hutchin	1,030	0	0
Hubbard	1,030	0	0
Sharpin	993	0	0
Blow	979	0	0

THE building trades are very satisfactorily represented in the list of Mayors elected last Saturday in the twenty-eight Metropolitan boroughs in the County of London. Among the names are Alderman H. G. Handover, of Paddington (builder); Mr. H. G. Norris, of Fulham (builder and estate agent); Alderman A. D. Dawnay, of Wandsworth (constructional engineer); Alderman H. Lyon Thomson, of Westminster (electrical engineer); Alderman Jabez Williams, of Lambeth (timber merchant); Alderman W. G. Spittle, of West Ham (builders' merchant); Alderman J. Scott Balfour, J.P., of Hornsey (iron merchant); and Mr. C. FitzRoy Doll, F.R.I.B.A., F.S.I., F.Z.S., of Holborn (architect).

THE TALBOT STAND AT OLYMPIA.

DURING this week Olympia has been the Mecca for many thousands of motorists, past, present, and future. Conspicuously placed at the Addison Road entrance is the "Invincible" Talbot Stand, No. 69. Here expert and tyro alike find occasion to make a lengthy pause. For the latter there is the fascination of looking at a make of car that has long been industriously establishing sensational records in many different parts of the world. For example, last August, in a petrol consumption test held by the Automobile Club of Australia, a 12-h.p. Talbot came first by running no less than thirty miles on 2.5 pints, equivalent to ninety-six miles per gallon. This is, we believe, almost 100 per cent. better than the previous record. But what has done most to win the Talbots their present reputation is their hill-climbing prowess, which has been proved time and again. The expert visitor to Stand 69 will notice with delight that the 12-h.p., 15-h.p., and 25-h.p. cars all have the new type of front axles with ball-bearing pivots, as previously fitted to the



20-h.p. model only. All these four models have a new and improved aluminium dashboard, which contributes considerably to their general smart appearance. Other excellent advantages of this make of car are the stiffening of the frame and steering column, the countersunk fitting of recording instruments, and the ease of detachment of the body without disconnecting any wires or engine fittings. It is worthy of note that the Clement Talbot works, being in Barlby Road, North Kensington, are only a few minutes' run from Olympia. It is possible, therefore, to see a car in the making almost immediately before or after seeing the same type on the stand.

The Clement Talbot, Ltd., showed their customary alertness when on Monday morning last, the 11th inst., a booklet containing a *résumé* of the notices appearing in a number of the leading journals on the 9th and 10th inst. was obtainable on Stand 69. A copy of it may be obtained post free from the works.

MR. TEMPLE MOORE, architect, London, has prepared plans for a church about to be erected in the newly formed parish of St. Cuthbert, Preston. Seating accommodation will be provided for 750 persons, and the estimated cost is £11,500.

MESSRS. F. MATCHAM & Co., architects, London, have prepared the plans of a boxing-ring and cinematograph hall proposed to be erected at 100 Whitechapel Road, on a site part of which was formerly occupied by Wonderland and part by the East London Palace. The premises will have accommodation for about 2,800 persons.

THE Cambrian Archaeological Society will hold its annual meeting next year, jointly with the Wiltshire Archaeological Society, at Devizes. Professor Boyd Dawkins is the new President of the Cambrian Society, and Mr. W. Heward Bell, High Sheriff of Wilts, is President of the Wilts Association. The local Secretary for the meeting will be Mr. B. H. Cunningham, F.S.A. (Scot.), who is a member of both Societies.

An exhibition of the etchings and lithographs of Mr. Joseph Pennell will be held at the galleries of the Fine Art Society, 148 New Bond Street, during December, opening with a private view on November 29 and 30. The collection shown will be a very complete one, the first on any such scale held in London, and will include the recent important series of lithographs executed by Mr. Pennell to illustrate the construction of the Panama Canal.

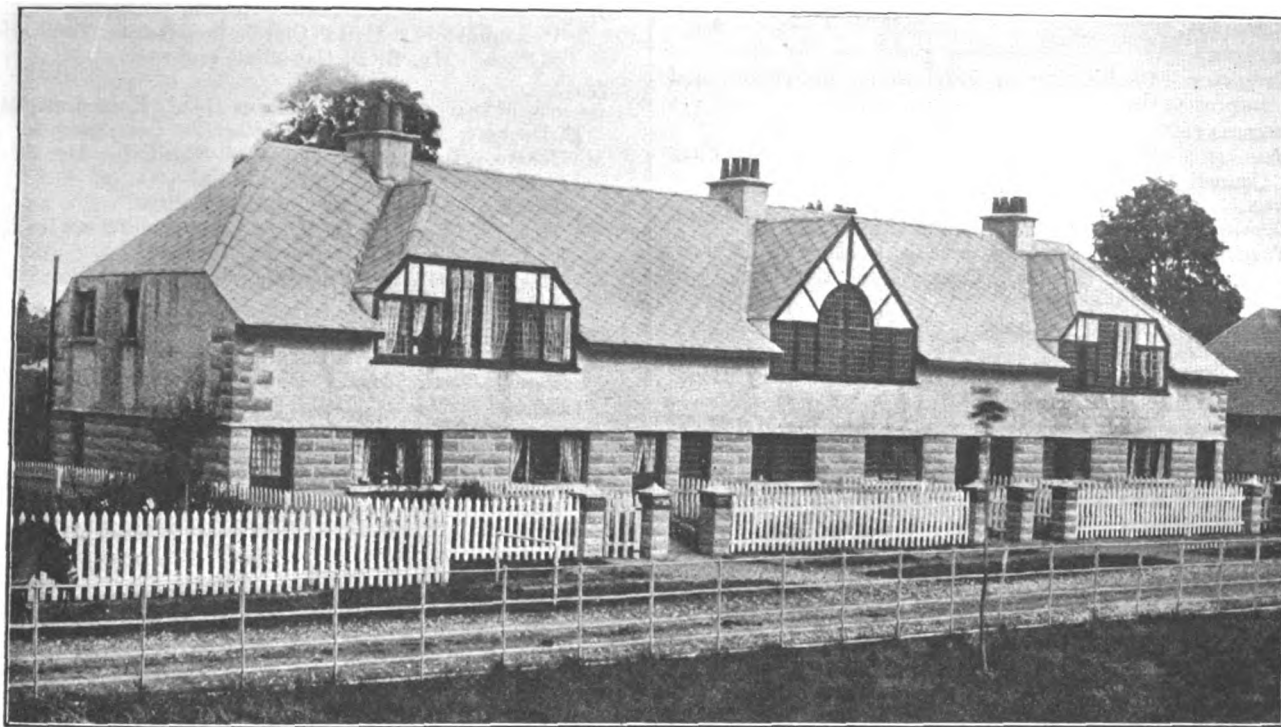
CONCRETE BLOCK COTTAGES.

THE accompanying illustration shows six of a number of cottages erected at Talbot's Inch, Kilkenny, Ireland, for the Kilkenny woodworkers, workers in the woollen mills and tobacco plantation, which industries are being fostered under the patronage of the Right Hon. Ellen Countess Dowager of Desart.

The plans show a most economical and admirable disposition of rooms, the large living-room and good-sized scullery being a great boon to the cottager, not to mention the provision of three bedrooms—necessary accommodation where there is a large family, and which is too often overlooked in the housing of the working classes. Attention should also be drawn to the grouping of the fireplaces, one set of breasts and stacks serving two houses. Nor has the architect, Mr. F. W. Kiddie, manager at Talbot's Inch, overlooked artistic

ing to the by-laws of the district), bonded together with ordinary wall ties. Perfectly dry buildings are ensured.

For the manufacture of these blocks various machines have been placed on the market, and one which stands pre-eminent is that already mentioned—namely, the "Winget," manufactured by the Winget Concrete Machine Co., Ltd., 5 Star Buildings, Newcastle-on-Tyne. This machine has been sent to all parts of the world, and blocks made on it used in the construction of farm buildings, cottages, bungalows, villas, officers' and men's quarters, prisons, administrative buildings, post offices, banks, village halls, theatres, schools and colleges, chapels, hospitals, mills and factories, test houses, boundary and retaining walls, electricity sub-stations, sea walls, various harbour works and reservoirs, shaft linings and arched roads, underground roads in collieries, and has also turned out thousands of yards of kerb and partition slabs.



CONCRETE COTTAGES, TALBOT'S INCH, Co. KILKENNY.—MR. F. W. KIDDIE, ARCHITECT.

effect. The arrangement of the large gabled windows, the contrast afforded by the rock-faced "Winget" blocks on the ground floor, the rough cast on the first, and the red fibro-cement tiles combine to give the exteriors a most pleasing appearance.

Such buildings as these will do much to overcome the antipathy with which concrete buildings have hitherto been regarded. The whole of the cottages have been erected in concrete blocks manufactured on the "Winget" machine, as were also the partition slabs for internal walls and the gate piers.

In some instances the results obtained in the past in the construction of concrete buildings have not been satisfactory, but there is no need for this condemnation to continue. It has been proved again and again that where suitable aggregate can be obtained such buildings can be erected at a cost which can compare more than favourably with either timber, stone or brick. If their hygienic value, as well as their lasting qualities and freedom from the expense of repair and upkeep, be also taken into consideration, they will be found much more economical. Certain points, however, must be adhered to in order to ensure satisfactory results. The grading of the aggregate is of primary importance; sufficient fine must be incorporated to make the block perfectly homogeneous, and the block must be thoroughly tamped. The finished block must then be kept watered for at least ten days, after which, to be thoroughly matured, it should be left for one month, when it will be ready for use. Where these precautions are taken in the manufacture of "Winget" concrete blocks and care exercised in the erection there is no need to fear damp—one of the points raised against the adoption of this method of construction.

If the climate is at all humid, and further precautions deemed advisable, the outer walls may be built on the cavity system, say two 4½-inch leaves with 2-inch cavity, or (accord-

These facts clearly demonstrate its immense adaptability. Its absolute simplicity of working, combined with the large output which can be obtained, place it in the front rank of concrete block-making machines.

It is proposed to establish a School of Mining, with special reference to quarrying, in connection with the University College of North Wales. At present there is no school of mining which deals with quarrying within the United Kingdom.

At the annual meeting of the South Shields branch of the Northern Counties Federation of Building Trade Employers, held under the chairmanship of Mr. Thomas Anderson, a satisfactory financial statement was presented. Mr. W. V. Jary was unanimously elected president for the ensuing year, and Messrs. John Christie and C. Tate vice-presidents. Mr. Alexander Ross was reappointed hon. treasurer, and Mr. F. E. Hannay secretary.

According to the *Board of Trade Journal* the Argentina *Boletín* of September 27 contains a decree authorising the General Directorate of Architecture to proceed departmentally with the supplementary work connected with the enlargement of the Casa de Moneda in Buenos Aires. The cost of this enlargement will amount to about £33,300. The same issue of the *Boletín* includes a decree authorising the said Directorate of Architecture to erect a night refuge home at Buenos Aires harbour, at a cost of about £90,000.

The Sheffield Builders' Exchange held last week their annual meeting. The reports showed that the Exchange had enjoyed a most successful year, and that there was a good balance in hand. Mr. W. H. Ibbotson was elected President, and Mr. W. C. Fletcher and Mr. J. D. Cook Vice-Presidents. Mr. Cook is also Treasurer, a position he has held from the beginning of the Exchange.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local).

ENGLAND.

BUCKINGHAMSHIRE.

Amersham.—Bungalow, Lexham Gardens, for the Building and Estates Development Co. (Bristol).
Ashley Green.—Two houses, Lye Green, for Mr. S. Webber.
Chalfont St. Giles.—Lodge and garage, Cokes Green. Messrs. Forbes & Tate (of London), architects.
Chalfont St. Peter.—Church. Messrs. Brown & Sons.
Two bungalows, Gold Hill, for Mr. C. Coxwell.
Great Missenden.—House, Nag's Head Lane, for Mr. A. B. Starkey.

CHESHIRE.

Congleton.—Parish Church, Buglawton: alterations and improvements.

CUMBERLAND.

Bewcastle.—Master's house in connection with the Park Council School.

DEVON.

Devonport.—Hospital: additions and alterations.
Newton Abbot.—Secondary schools. Mr. P. Morris, A.R.I.B.A. (of Exeter), County education architect; also
Torquay.—Secondary schools.

DORSET.

Poole.—Eleven cottages, Ringwood and Cemetery Road, for Mr. R. T. Habgood.
House and additions, Alverton Avenue, for Mr. E. V. Wilson.
House, Cheltenham Road, for Mrs. A. E. Hoare.
House, New Road, for Messrs. Insley & Insley.
Pair of houses, Wroxham Road, for Mr. H. G. Sanger.
Alterations to premises, No. 146 High Street. Mr. H. Kendall, architect.

DURHAM.

North Shields.—Two elementary schools, Tynemouth.
Sunderland.—Engine works, Millfield, for Messrs. Davie & Co.
Engineers' works, Pallion: extensions for Messrs. John Lynn & Co.
Pottery, Millfield, for Mr. W. L. Pattison.

ESSEX.

Coggeshall.—Council School, St. Peter's Road.
Halsted.—Public baths.

HAMPSHIRE.

Bournemouth.—The "Hawthorns" Hotel, West Cliff: additions.
Houses as below:—
Plot 172, Beechwood Avenue, for Mr. R. Collins.
Plot 35, Charminster Avenue, for Mr. H. C. Barnes.
Two in Seaward Avenue, for Mr. J. Flower.
"Oak Lodge," Talbot Avenue: additions for Mr. G. E. Lambert.
Two, plots 165 and 172 The Avenue, Redhill Park, for Mr. W. F. Barrett.
Plot 1, Wentworth Avenue, for Messrs. Burridge & Bovill.
No. 3 Lansdowne Crescent: additions for Mr. H. Newman.
In Ashbourne, Cromwell, and Southbourne Roads, for Mr. M. Sellick.
Plot 209, Berwick Road: additions for Mr. S. Osburn.
Three in Bryanstone Road, for Mr. A. Barnes.
Plot 9, Charminster Road, for Mr. C. Frampton.
Plot 212, Dunbar Road, for Mr. A. D. Lambert.
Four in Guildford Road, for Miss Holt.
Plot 49, Guildhill Road, for Mr. C. Lloyd.
73 Holdenhurst Road: additions for Messrs. E. Pope & Co.
In Leamington Road, for Mr. F. Holly.
Plot 142, Leap Hill Road, for Mr. W. E. Bailey.
In Leap Hill Road and Clarence Park, for Mr. F. Pond.
19 McKinley Road: addition for Mrs. J. Bolitho.
In Maxwell Road, for Mr. J. Young.
Four in Middle Road, for Messrs. Jones & Seward.
Plot 358, Milton Road, for Mr. F. Harding.

Plot 11, Moorfield Road, for Mr. H. Dean.
Plot 12, Muccleshell Road, for Mr. J. Arnold.
"Shiplake," Poole Road: addition for Dr. Scott.
Plot 14, St. Anthony Road, for Messrs. A. Lambert & Son.
"Court Royal," South Cliff Road: addition for Mr. J. A. Butterworth.
Plot 26, Spurgeon Road, for Mr. F. Pond.
Plot 19, Talbot Hill Road, for Mr. S. Carpenter.
Plot 22, Talbot Hill Road, for Mr. W. G. Ivamy.
Plot 196, Wimborne Road, for Mr. G. Pitson.
Two houses, shops and stables, plots 67 and 68 Clarence Park Road, for Mr. M. Sellick.
Argyle Laundry: addition for Mr. R. Brown.
Shops, 1 to 6 Portman Terrace, Wentworth Avenue, for Messrs. S. Brown & Sons.
Fareham.—Holy Trinity Church: chancel and organ chamber (£2,500).
Winchester.—Swimming baths, North Walls.
Headquarters, Hyde Close, for Hants Territorial Force. Mr. B. D. Cancellor, architect.

KENT.

Gravesend.—Four cottages, Downs Road, Northfleet. Mr. E. Bennett, A.R.I.B.A., architect.
Maidstone.—Two houses, Old Tovil Road, for Mr. J. J. Hunn.
House, Postley Road, for Mr. Mallins.
Nos. 12, 14 and 16 St. Peter Street: additions for Mr. J. Wright.
Nos. 38 to 42 Week Street: additions and alterations for Messrs. Boots, Ltd.

LANCASHIRE.

Blackburn.—St. Philip's Parochial Hall (£3,000).
Padiham.—Town Hall, Baths, Market Halls, &c. (£30,000.) Messrs. Pollard & Pollard, architects.
Prestwich.—School-church for Simister Lane district (£2,000).
Stretford.—St. Peter's Church.
Turton.—Weaving shed for 400 looms, for the Turton and Edgworth Mill Building Club. Mr. R. Shorrocks (of Darwen), contractor.

LINCOLNSHIRE.

Burgh.—Shop, &c., for Mr. F. W. Capes.
Grimby.—Guardians' children's homes, Brighowgate (£8,000).
Lincoln.—Three houses and a shop, Croft Street, for Mr. R. L. Holland.
Twelve houses, Gaunt Street, for Mr. C. R. Lucas.
Refuse destructor.

MIDDLESEX.

Teddington.—Church at Fulwell.
Tottenham.—County School for boys and girls, The Green (£16,500).

NORTHAMPTONSHIRE.

Burton Latimer.—Boot Factory, Piggott's Lane: addition for Mr. Coles.
Kettering.—Hospital alterations.
Wellingborough.—Boot and shoe Technical Central Institute (£5,500).

SHROPSHIRE.

Ludlow.—Drill Hall, &c., for the Shropshire Territorial Force Association. Mr. J. Butters, architect.
Oswestry.—Boys' secondary school. Messrs. J. Dallow & Sons, contractors.

STAFFORDSHIRE.

Cradley Heath.—Mission church, Whitehall Road.
Fenton.—Church of England School: alterations.
Lichfield.—Five houses, Trent Valley Road, for Mr. G. Haynes (of Walsall).
Picture Palace, Tamworth Street, for Mr. J. Lester.
Newcastle.—Cinematograph theatre, High Street. Mr. J. T. Snape, architect.
Stoke-on-Trent.—"Oakhill" Council School, Rookery Lane.

SURREY.

Hindhead.—House for Mr. Leuchars.

SUSSEX.

Hastings.—No. 3 Norman Road: alterations. Messrs. Adams & Jarrett (of St. Leonards-on-Sea), builders.

WESTMORLAND.

Arnscliffe.—St. James' Parish Church: additions and alterations. (Extra 225 sittings.) £2,000.

WORCESTERSHIRE.

Bournville.—Parish Hall, &c. (£2,000). Mr. W. A. Harvey (of Birmingham), architect.
Droitwich.—Workmen's cottages, Vines Lane (£1,700).

WORCESTERSHIRE—continued.

Evesham.—Picture House, Swan Lane (£2,500). Mr. H. E. Dicks, architect.
Stourport.—Picture House, Lickhill Road, for the Electric Co., Ltd.

YORKSHIRE.

Anston, North.—Working-men's Club. Mr. J. W. Winter (of Sheffield), architect.
Barnoldswick.—St. James' (new) Church. (Accommodation for 770 sittings.) £8,400. Mr. B. Preston, A.R.I.B.A. (of Manchester), architect.
Goole.—Workhouse hospital, &c.: additions and alterations. Messrs. Thorpe & Turner, architects.
Harrogate.—Elementary school, Skipton Road, for 700 places.
Leeds.—Elementary schools for 550 places, St. George's parish (£6,000).
"The Lyceum Picture House," Cardigan and Thornville Roads, Burley. Messrs. T. Winn & Sons, architects.
Norton.—Greenhill school alterations (£600 to £700). Mr. Margerrison, contractor.
Pontefract.—Public baths (£6,200). Mr. A. Nunweek (of Sheffield), architect.
Silkstone.—Public elementary school.
Tong Park.—House. Messrs. S. Jackson & Son (of Bradford), architects.

WALES.

Abercrave.—Twenty Council dwellings.
Aberystwyth.—National library (second portion), £50,000.
Cardiff.—Vicarage and parish hall for St. Martin's, Roath.
Colbren.—Twenty Council dwellings.
Cwmtydach.—Council School alterations. Mr. J. Rees (of Pentre), architect.
Swansea.—The "Terminus" Hotel: alterations.
"Ship" Inn, St. Thomas: alterations.
Ystradgynlais.—Twenty Council dwellings.

SCOTLAND.

Greenock.—Finnart School for 1,086 places (£17,500).
Motherwell.—Public school, Dalziel: extension (£5,500).
Bowlhouse, High Road, for the Bowling Club.
Public slaughter-house: additions.
Rosyth.—Home and Club for sailors and marines.
Stepps.—Double villa, Alexandra Avenue, for Mr. J. Earley.
Troon.—St. Ninian's Episcopal Church (£1,580). Mr. J. A. Morris, F.R.I.B.A. (of Ayr), architect.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 25,219. Nov. 13, 1911. Process for the manufacture of hollow floors and ceilings. Maria Giese, of Bottmuhle 3, Cologne. This invention relates to a process for the manufacture of hollow floors and ceilings, according to which a netting is placed temporarily over bent bars, so that when the floor or ceiling is being constructed it adopts the required shape, and it serves after the setting and tying of the adjacent ends as a plaster support. Thus it is possible to produce the hollows of the floor without using special bodies and, further, to make the plain parts of the ceiling without the use of special plaster supports. Fig. 1 is a longitudinal section showing the manner in which a hollow floor and ceiling are made. Fig. 2 shows the finished floor and ceiling in longitudinal section. Fig. 3 is the bent bar used for producing the cavities. The bent bars, *a*, are placed upon the boards, *g*, of the scaffolding at the places where the hollows of the ceiling are to be situated. The bent bars, *a*, are spaced apart in each row by means of any of the well-known auxiliary devices, whereupon a plank, *d*, is placed upon each row of bars, *a*. These planks can serve as gangways. The wire netting, *b*, is placed over the bars so that it extends from one plank, *d*, to the other, these planks serving as joints between the ends of the several parts of netting, *b*. In order to insulate the netting from the concrete, a layer, *c*, of tarred roofing-felt or the like is placed upon the netting, *b*. The netting can be secured in the concrete at the lowest parts of the ceiling by means of any convenient bondings. The supports or casing being thus completed,

the concrete with the iron reinforcements can be laid, whereupon, after the concrete has set, the scaffolding—that is to say, the boards, *g*, the planks, *d*, and the bent bars, *a*—are removed. The netting *b*, is then pulled down to form one

Fig. 1.

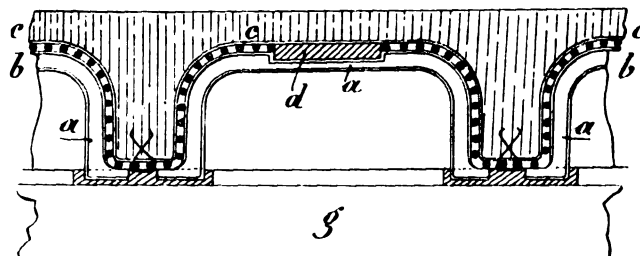


Fig. 2.

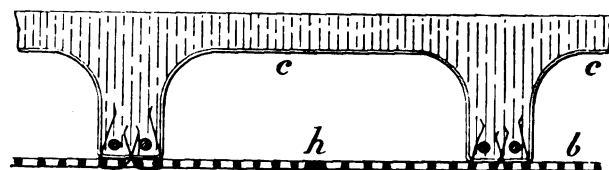
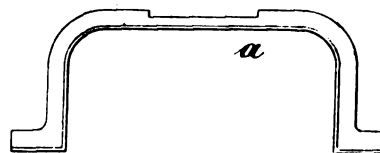


Fig. 3.



horizontal plane, fig. 2. The netting, *b*, is tied horizontally, and the ends are connected so that no seams or joints are visible; the netting thus prepared can serve as support for the plaster. The layer, *c*, of insulating material remains adhering to the concrete. October 9, 1912.

PATENT SPECIFICATIONS PUBLISHED
NOVEMBER 7, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 16,304. July 14, 1911.—Date claimed under International Convention, March 8, 1911. Jules Brudenne, 17 rue Planchat, Paris. Manufacture of lead piping.

23,108. Oct. 19, 1911.—F. J. Walton, 10 Woodberry Crescent, Muswell Hill, N., and L. V. Rogers, 115 Valkyre Road, Westcliff-on-Sea. Securing device for doors.

23,138. Oct. 19, 1911.—F. J. Matchette, St. Charles Hotel, Milwaukee, Wisconsin, U.S.A. Vacuum cleaning apparatus.

23,443. Oct. 24, 1911.—E. B. Sanders, 20 Dorset Road, Bexhill-on-Sea. Air inlets for buildings and the like.

23,659. Oct. 26, 1911.—Harry Johnson, 10 Conference Place, Great Thornton Street, and George Paddison, 93 Eton Street, Hessle Road, Kingston-upon-Hull. Kitchen and like fireplaces.

24,124. Oct. 31, 1911.—Date claimed under International Convention, Nov. 4, 1910. J. W. Aylsworth, 223 Midland Avenue, East Orange, Essex, New Jersey, U.S.A. Plastic composition and method of preparing same.

24,187. Nov. 1, 1911.—Alfred Squire, Percy Lodge, Belmont Road, Twickenham. Domestic stoves.

24,481. Nov. 3, 1911.—H. V. R. Read, of the British Fire Appliances Co., Ltd., Craig's Court, Charing Cross, W.C. Apparatus for use in extinguishing fires.

24,546. Nov. 4, 1911.—H. F. Berry, 9 Victoria Street, Westminster, S.W. Heating and drying of stone and other materials for use on roads and like surfaces.

25,517. Nov. 16, 1911.—George Pickles, Mytholm Iron Works, Hebden Bridge, York. Electric-power timber band saw machines.

27,196. Dec. 5, 1911.—John Spencer, Ltd., T. H. Spencer, and H. Spencer Smallman, all of the Globe Tube

Works, Wednesbury, Staffs, and Spencer Horton, 64 Lodge Road, West Bromwich, Staffs. Fire-alarm, &c., valves. 27,866. Dec. 12, 1911.—R. C. Sugg, 10 Thornton Road, Thornton Heath, Surrey. Valves used for the flushing of water-closets.

28,397. Dec. 16, 1911.—T. G. Ellison, 91 Wiverton Road, Sydenham, S.E. Distributing drum or header for heating systems.

19. Jan. 1, 1912.—Walter Jones, Titan Works, Amblescote, Staffs. Sprinklers for sewage and other liquids.

2,534. Jan. 31, 1912.—P. Wenmackers, 26 rue de Belle Vue, Ghent, Belgium. Construction of cement and the like foundations and ground anchorages.

4,152. Feb. 19, 1912.—Henri Gobert, 133 Avenue de Saxe, Lyons, and Paul Meyer, 1 rue Victor Hugo, Lyons. Hot-air distributing apparatus.

7,269. March 25, 1912.—Arthur Durand, 159 rue Saint Maur, Paris. Fire-extinguishing appliances.

10,349. May 1, 1912.—Date claimed under International Convention, June 10, 1911. Dr. Heinrich Specketer, 32 Kaiserstr., Griesheim-on-Main, Germany. Production of zinc and other metals of a similar nature.

11,069. May 9, 1912.—W. M. Venable, 1204 Westinghouse Building, Pittsburgh, Penn. Temporary forms or supports for extending concrete floors in situ.

13,427. June 7, 1912.—Date claimed under International Convention, June 8, 1911. T. V. L. Boilot, Avenue de Puy-de-Dome, Clermont-Ferrand, France. Portable scaffolds.

13,861. June 13, 1912.—Date claimed under International Convention, Dec. 28, 1911. A. F. Berry, 27 Woodville Road, Ealing. Electric heating apparatus.

14,646. June 22, 1912.—Industrie Gesellschaft, M.B.H., 1 Eckenroder Strasse, Wiesbaden, Germany. Closet seat and process of manufacture.

14,832. June 25, 1912.—Date claimed under International Convention, Oct. 31, 1911. T. J. Sturtevant, Wellesley, Norfolk, Mass. Crushing mills.

16,533. July 15, 1912.—Henry Fowler, The Hollies, Chellaston, near Derby, and W. Chatterton, 15 Wilfred Street, Derby. Fire extinguisher.

18,731. Aug. 15, 1912.—F. D. Jacobs, Canton, Norfolk, Mass. Combined drinking fountains and faucets.

CORRESPONDENCE.

Catalogues Wanted.

383 Calle Suipacha, Buenos Aires,
Octubre 4 de 1912.

MUY SEÑOR MIO,—Nos permitimos dirigirnos a Usted, agradeciéndole muchísimo si pudiera tener a bien de comunicarnos con algunas casas de esa nación a fines que se nos dirijan mandándonos precios y catálogos de máquinas eléctricas para copias de planos, máquinas para secar las copias, papeles técnicos y todas clases de aparatos y novedades referentes a copias de planos, como tambien novedades para arquitectos, constructores e ingenieros.

En espera que este pedido nos será concedido, y que en el próximo correo tendremos alguna correspondencia y que al mismo tiempo disculpará nuestro atrevimiento, aprovechamos la oportunidad para saludarlo atentamente.

“LA FOTO-ARGENTINA.”

NOTA.—Agradeceríamos si la correspondencia fuera en Español o Francés.

Translation.

DEAR SIR,—We should be very much obliged if you would kindly put us into communication with some firms in your country who would be willing to open business relations with us by sending us prices and catalogues of electric machines for copying plans, machines for drying the copies, special papers for same, and all classes of apparatus and novelties referring to the copying of plans, and also other novelties useful for architects, builders, and engineers.

Hoping that you will grant us this favour, and that by the next post we shall have a reply, and also that you will pardon our boldness,—We beg to remain,

“LA FOTO-ARGENTINA.”

N.B.—We should feel obliged if our correspondence can be conducted in Spanish or French.

THE Establishment Committee of the London County Council recommend that tenders should now be invited from selected firms for the construction of the superstructure of the new County Hall.

VARIETIES.

MR. ROBERT ANGELL, architect and surveyor, 133-135 Regent Street, W., has prepared plans for the rebuilding of Nos. 179, 181, 183, and 185 Great Portland Street, W.

MR. H. PAYNE WYATT, architect and surveyor, 18 Angell Road, S.W., has prepared plans for the proposed additional storey at the Bon Marché building, Brixton.

THE Theatres and Music Hall Committee of the London County Council have approved drawings of the following proposed cinematograph halls:—(i.) 516 and 518 Commercial Road; (ii.) 92 to 106 Denmark Hill; (iii.) 192-4 East India Dock Road; (iv.) 194 and 196 Holloway Road; (v.) Queen Street and Bridge Road, Hammersmith; (vi.) 140 Maida Vale.

AN occasional London correspondent sent us a few days ago a letter which we quote, apart from its gratifying opinion of ourselves, as it suggests a practice which might well be followed by others of our readers: “For something like forty-five years have we (my father and I) received *The Architect*. I have for thirty-two years since his death regularly every Sunday afternoon much enjoyed reading its interesting and instructive and, as I do a little private building, useful pages. I have a nephew in Moose Jaw, Sask., a rapidly developing place. I every Friday post it to him, and he appreciates it to the full. He is in the city engineer's office, and all in his department read it, even to the highest officials. . . .”

THE new legislative buildings for the province of Manitoba, as provided for in the plan of Mr. F. W. Simon, architect, of Liverpool, will occupy a commanding position, on a magnificent park-like site at Winnipeg, says a correspondent, of nearly thirty acres on the bank of the Assiniboine river. The cost will be, when completed, \$2,000,000. Sixty-five architects, practising within the British Empire, submitted plans for competition. The main entrance of the building, which is to be in the form of the letter “H,” will face Broadway on the north, but on every side there will be an entrance almost equally imposing, all of which will lead to the grand rotunda in the centre of the pile of buildings. The order used in construction will be Ionic. The approach will be by means of a grand flight of stairs leading to the grand staircase hall on the first floor. The central dome will be one of the most striking features of the building. This will be 240 feet high, resting on huge columns. The new Manitoba parliament buildings, it is said by those competent to express an opinion in the matter, will be the finest legislative building in Canada.

TRADE NOTES.

NOWADAYS, outdoor sports have become so essentially a part of every boy's life that the winter is apt to pall. If they could only rely upon King Frost the difficulty would be overcome, but, unfortunately, “His Majesty” appears to have no special liking for these islands, for his visits are usually few and short. The result often is that boys seek questionable amusements to pass the time, to their own moral undoing and much anxiety to their parents. When considering the question of Christmas presents this year, why not endeavour to solve some part of this problem? For instance, a billiard table in the home will afford hours and hours of pleasure for the boys as well as for the girls and yourself. Billiards is the one game that never becomes monotonous, simply because every game opens up a new phase of its exposition. It is not necessary to have any special room, as tables are made of all sizes. Riley's billiard tables are made for the home on two principles—one to fit your own dining-table and the other a combined dining and billiard table. The Riley “Miniature” is made in sizes from 4 feet 4 inches at £3 7s. 6d. up to 8 feet 4 inches at £10, the popular size being 6 feet 4 inches at £5 5s., and when not in use they can be easily lifted from the dining table and stored against the wall. Riley's combined billiard and dining tables are really handsome pieces of furniture, and can be obtained in woods to match your furniture. By a patent device they can be converted in a few seconds from dining to billiard table, and vice versa. As dining tables there is no indication of their dual purpose, and what is of importance there is plenty of room for the knees. Prices range from £13 10s. Riley's tables are built in exact proportion to the full size, so that the same accurate game is obtained. The cost can be spread over thirteen payments if desired, for 5 per cent. over cash prices, so that they are easily within the reach of the most moderate income. A most interesting catalogue, fully illustrated, can be obtained post free by sending a postcard to E. J. Riley, Ltd., Park Mills, Accrington.

THE Architect and Contract Reporter.

FRIDAY, NOVEMBER 22, 1912.

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AGENTS FOR AMERICA.

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AGENTS FOR CANADA.

Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made.

Subscription, \$5.20.

AGENTS FOR AUSTRALIA, NEW ZEALAND, TASMANIA AND CANADA.

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SOUTH AFRICA: Central News Agency, Ltd.

NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

BULGARIA.—Dec. 1.—H.M. Legation at Sofia report that the Ministry of Public Works, Sofia, invite the submission of designs for (1) a new Royal Palace and (2) new law courts. Four prizes are offered in each competition to the value of 10,000 fr. (£400), 7,000 fr. (£280), 4,500 fr. (£180), and 2,500 fr. (£100) in the case of (1); and 6,000 fr. (£240), 4,000 fr. (£160), 2,500 fr. (£100), and 1,250 fr. (£50) in the case of (2). Architects wishing to compete must submit their designs, not later than December 1, to the "Section d'Architecture au Ministère des Travaux Publics," Sofia, where copies of the programmes, &c., may be obtained on request. A copy of the programme (in French) of each competition may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

BULGARIA.—Dec. 1.—The Commercial Intelligence Branch of the Board of Trade is in receipt of particulars of a competition of designs for a national library and museum, which it is proposed to erect at Sofia at an estimated cost of 2,000,000 francs (£80,000). Prizes of £160, £100, and £40 are offered. Designs, in sealed envelopes, must reach the "Euphorie-Frères Evloguie et Christo Gueorguieff," Sofia, by Dec. 1. Full particulars can be obtained from the same address. A copy of the programme (in French), together with blue prints, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

(Continued on page 7.)

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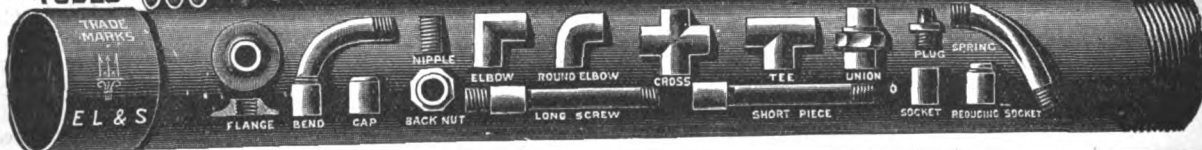
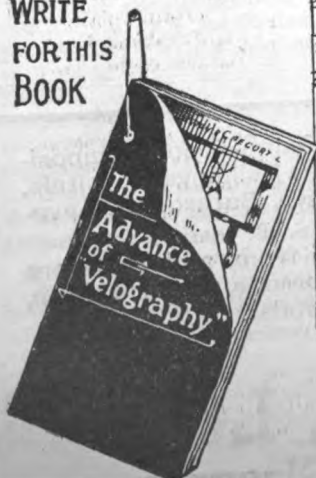
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CARLISLE.—Dec. 2.—The Local Education Authority for the city of Carlisle having decided to erect new school buildings, caretaker's cottage, &c., on a site off Newtown Road, invite architects practising in Carlisle to submit designs and estimates for the same in competition. A copy of the conditions, instructions, and particulars for competing architects, together with a plan of the site, may be obtained on or after August 1 on application at the office of the City Surveyor, 36 Fisher Street, Carlisle.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

GLASGOW.—Nov. 29.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Battlefield Road and Sinclair Drive, Langside. Premiums of £50, £30, and £25 respectively will be awarded. A plan of the site, along with a copy of the terms and conditions of the competition, may be obtained from Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

CONTRACTS OPEN.

ATHERSTONE.—Nov. 29.—For erection of new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster, Atherstone Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

BAKEWELL.—Nov. 30.—For erection of a mortuary in connection with the infirmaries at the workhouse, for the Guardians. The Workhouse Master, Bakewell.

BIRMINGHAM.—Dec. 5.—For the erection of offices and messroom at the Central Station, for the Midland Railway Co. The Engineer's Office, Derby Station.

BLACKWOOD.—Nov. 30.—For five houses and shops at Blackwood, Mon. Mr. R. L. Roberts, M.S.A., Abercarn.

BLANDFORD.—Dec. 7.—For erection of combined yeomanry and infantry headquarters, with sergeant-instructor's house, for the Territorial Force Association of the County of Dorset. Deposit £1 1s. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, Dorchester.

BRADFORD.—For the several works required in the alteration and enlargement of the present café and adjoining premises in Tyrrel Street and Bond Street, for Messrs. T. Collinson & Sons, Ltd. Send names to Messrs. W. J. Morley & Son, architects, Swan Arcade, Bradford.

BRUTON.—Dec. 2.—For erection of a public library and caretaker's flat, for the trustees of the Ward Bequest. Deposit £1 1s. Mr. Arthur J. Pictor, A.R.I.B.A., architect, Bruton, Somerset.

CARSHALTON.—Dec. 4.—For the erection of verandahs at the Queen Mary's Hospital, Carshalton, Surrey, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

EGREMONT.—Nov. 26.—For conversion of existing buildings into a Masonic hall, erecting ante-rooms, lavatories, and boundary wall. Mr. J. Cowan, surveyor, &c., Egremont, Cumberland.

FARNHAM.—Nov. 30.—For the following works: (1) erection of cemetery chapel and lodge; (2) iron fencing and gates; (3) forming paths and laying surface-water drains at the Green Lane Cemetery, for the Farnham Joint Burial Committee. Deposit 10s. 6d. for each section. Mr. A. J. Stedman, architect, South Street, Farnham.

FRIZINGHALL.—Dec. 5.—For the erection of timber and corrugated iron awning, offices, latrine, &c., for the Midland Railway Co. The Engineer's Office, Derby Station.

FOLKTON.—Nov. 27.—The Sherburn Rural District Council invite tenders for the following contracts, in connection with the waterworks:—Contract No. 1: The supply and erection of an oil engine in substitution of horse-driven

gear. Contract No. 2: The construction of an engine-house. Mr. W. Plewes, Bridlington Street, Hunmanby.

HALE.—Nov. 28.—For the conversion of the girls' home, Ashley Road, into public offices, for the Urban District Council. Mr. F. H. Brazier, A.R.I.B.A., architect, Bank Chambers, Ashley Road, Hale.

HARROGATE.—Nov. 25.—For the separate trades of mason and bricklayer, carpenter and joiner, plumber and glazier, plasterer, painter, and furnisher, in connection with the erection of entrance lodge and conveniences, Wetherby Lane Cemetery, and additions to Starbeck Baths, for the Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer and surveyor, Harrogate.

HOUSEL BAY.—Nov. 30.—For erection and completion of a residence at Housel Bay, Cornwall. Mr. S. Hill, architect, Green Lane, Redruth.

HULL.—Nov. 27.—For builders' and ferro-concrete work required in the construction of stores and workshop and in alterations to existing buildings at the power station, Osborne Street. The ferro-concrete work is to be carried out by an experienced firm to the city engineer's design. Deposit 10s. Mr. A. E. White, M.Inst.C.E., city engineer, Guildhall, Hull.

HYDE.—Dec. 3.—For extension to the public baths and other works in Union Street. Deposit £2 2s. Mr. J. H. Fletcher, architect and surveyor, 45 Clarendon Place, Hyde.

IRELAND.—For erection and completion of the new church of St. Patrick, Balla. Messrs. Doolin & Butler, architects, Mansion House Chambers, Dublin.

IRELAND.—Nov. 25.—For erection and completion of a pair of semi-detached villas on the Douglas Road, Cork, for Mr. W. G. Wolfe. Mr. J. F. M'Mullen, M.R.I.A.I., architect, 30 South Mall, Cork.

IRELAND.—Dec. 4.—For erection and furnishing of National school buildings at St. Columba's (Ballyheerin), county Donegal. The Office of Public Works, Dublin, and Rathmullen Coastguard Station, county Donegal.

IRELAND.—Dec. 17.—For erection and furnishing of National School Buildings at Kilcoosey, county Leitrim. The Office of Public Works, Dublin, and the Royal Irish Constabulary, Dromahair.

LIVERSEDEGE.—Nov. 27.—For alterations and additions to Millbridge Wesleyan Sunday schools. Mr. J. W. Burrows, architect, Birstall, near Leeds.

LONDON.—Dec. 12.—For alteration and extension of the receiving wards at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union. Deposit £2. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

LOSTWITHIEL.—Dec. 3.—For erection of a drill hall, for the Cornwall County Territorial Force Association. Mr. O. R. Caldwell, architect, Penzance.

LUDDENDENFOOT.—Dec. 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with special subjects centre alterations at Luddendenfoot Council School—viz. builder, joiner, plasterer, and painter. The Education Architect, County Hall, Wakefield.

MANCHESTER.—For erection of warehouse buildings at Hyde Road Works, for Messrs. Hunter, the Teamen, Ltd. Mr. W. Wrigley, A.R.I.B.A., 2 King Street, Wakefield.

MANCHESTER.—Dec. 7.—For erection of a Municipal school in Heald Place, Rusholme. Deposit £2 2s. The Education Offices, Deansgate, Manchester.

MANCHESTER.—Dec. 7.—For the supply of red terra-cotta for the new Heald Place Municipal school, Rusholme. Deposit £1 1s. The Education Offices, Deansgate, Manchester.

MERSHAM.—Nov. 30.—For carrying out certain repairs to house and buildings at Chequer Tree Farm, Mersham, Kent, for the Kent County Council. Mr. A. Barker, county land agent, 38 King Street, Maidstone.

MORECAMBE.—Nov. 25.—For whole or separate trades required in new organ chamber and south aisle at St. Barnabas Church. Messrs. Austin & Paley, architects, Lancaster, and Messrs. Wright & Son, surveyors, Lancaster.

NEW HUNSTANTON.—Dec. 4.—For erection of shelters at the foot of the Green. Mr. J. S. B. Glasier, clerk, the offices of the Council, Greengate Road, New Hunstanton.

NEWPORT.—Nov. 27.—For erection of a residence in Park Lane, Newport, Devon. Messrs. W. C. Oliver & Son, A.R.I.B.A., architects and surveyors, Bridge End, Barnstaple.

NEW TREDEGAR (MON.).—Nov. 28.—For erection of a police court at New Tredegar and alterations to the station, for the Standing Joint Committee. Mr. W. Tanner, F.S.I., county surveyor, Newport, Mon.

OLD FLETTON.—For the rebuilding of about 25 yards of the front boundary wall of the Old Fletton elementary school playground. The Surveyor to the Hunts. Education Committee, 36 High Street, Huntingdon.

OSWALDTWISTLE.—Dec. 3.—For erection of an elementary school to accommodate 268 children, for the Lancashire Education Committee. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

PELLON.—Nov. 27.—For the various works required in extension to foundry at Pellon, Halifax. Messrs. Jackson & Fox, Rawson Street, Halifax.

PLYMOUTH.—Dec. 2.—The Secretary of State for War invites tenders for the following work—viz.: Erection of four barrack blocks, each for four non-commissioned officers and eighty men, bath, and cook house, and drainage and water and gas mains and sitework complete at Crownhill, Plymouth, in the Southern Command. The Director of Barrack Construction, 80 Pall Mall, London, S.W., or at the Barrack Construction Office, Fort Bovisand, Plymouth. Send applications and 10s. deposit by Nov. 25 to the Director of Barrack Construction.

PORTSMOUTH.—Nov. 26.—For erection, completion, and maintenance for six months of the following works, viz.: (1) Erection of twenty-two houses on the west side of Curzon-Howe Road, Portsea (section X); (2) erection of seventeen houses on the east side of Curzon-Howe Road, and four houses in Kent Street, Portsea, together with a wall and iron fence (section Y), for the Town Council. Deposit £2 2s. The Borough Engineer's Offices, Town Hall, Portsmouth.

ROCHE.—Nov. 28.—For erection of six houses at Tresaize, Roche. Mr. C. Hawke, Woon, Carbis, Roche, Cornwall.

RUGBY.—For small motor garage and shop. Messrs. Franklin & Newman, architects, Rugby.

SCOTLAND.—Nov. 30.—For the following works required in connection with the proposed construction of a public convenience at Cathedral Street (at Buchanan Street), Glasgow—viz. (1) mason, brick, joiner, &c., works, and (2) sanitary fittings—for the Corporation. The Office of Public Works, City Chambers, 64 Cochran Street, Glasgow.

SCOTLAND.—Dec. 5.—For erection of a fish mart and thirty offices on ground at Wick Harbour, for the Wick and Pulteney Harbour Trustees. Deposit £4 4s. Mr. G. E. B. Coulcher, civil engineer, Harbour Office, Wick.

SHREWSBURY.—Nov. 29.—For extension of Shrewsbury station sorting office, for the Commissioners of H.M. Works and Public Buildings. The Superintendent, Station Sorting Office, Shrewsbury, and H.M. Office of Works, Storey's Gate, London, S.W.

SIMONSTONE.—For the various trades required in erection of two pairs of small houses at Simonstone, Lanes., for the Simonstone Building Co. Mr. G. Parkinson, architect, Mercantile Chambers, Burnley.

SWINTON.—Nov. 27.—For lining with glazed tiles the swimming bath and shower baths at their schools at Swinton, near Manchester, for the Manchester Board of Guardians. Deposit 10s. 6d. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

SWINTON.—Nov. 27.—For laying a wood block floor to the boys' dayroom at their schools at Swinton, near Manchester, for the Manchester Board of Guardians. Deposit 10s. 6d. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

THORNBURY.—For the several works (including steelwork and erecting) required in extension of the existing workshops, &c., at Thornbury, Yorks., for the Phoenix Dynamo Manufacturing Co., Ltd. Messrs. W. J. Morley & Son, architects, Swan Arcade, Bradford.

TONBRIDGE.—Dec. 19.—For the erection of a Council School at Sussex Road, to accommodate 400 scholars, and other buildings. (Mr. W. H. Robinson, M.S.A., county education architect.) Send applications and £1 deposit by Dec. 4 to Mr. Fras. W. Cook, secretary of the Kent Education Committee, Caxton House, Westminster, S.W. (See advertisement.)

TORRINGTON.—Nov. 25.—For erection of a drill hall and infantry and yeomanry headquarters at Torrington, for the Territorial Force Association of the County of Devon. Deposit £1 1s. Messrs. Ellis, Son & Bowden, architects and surveyors, Bedford Chambers, Exeter.

WALES.—For erection of a cinema theatre at Glyn Neath. Send names to Mr. M. H. Hunter, architect and surveyor, Neath.

WALES.—For extensive alterations to business premises at Caerphilly, for Mr. F. Piggott. Mr. D. M. Davies, M.S.A., Underhill Chambers, Caerphilly.

WALES.—Nov. 23.—For erection of a central rescue station in Maesgwyn Road, Wrexham, for the North Wales Coal Owners' Association. Send names and £1 1s. deposit by Nov. 23 to the Secretary of the North Wales Coal Owners' Association at Elwn House, King Street, Wrexham.

WALES.—Nov. 26.—For the erection of two public conveniences at Senghenydd, also for the construction of about 450 lineal yards of 9-inch stonework sewers, with manholes and other contingent work, at Caerphilly. Mr. A. O. Harpur, surveyor, Council Offices, Caerphilly.

WALES.—Dec. 3.—For the execution of structural alterations and additions to the Maesteg town hall and market buildings. Deposit £1 1s. The Architect and Surveyor to the Council, 32 Commercial Street, Maesteg.

WALES.—Dec. 7.—For erection of the Eisteddfod pavilion, to accommodate 14,000 people, in Bailey Park, Abergavenny, for the Eisteddfod Frenhinol Genedlaethol Cymru, y Fenni, 1913. Mr. B. J. Francis, architect, Linden House, Abergavenny.

WROTHAM.—Dec. 5.—For enlargement of the Council School at Borough Green, Wrotham, to accommodate 150 additional scholars, for the Kent Education Committee. (Mr. W. H. Robinson, M.S.A., architect.) Send in applications and £1 deposit by Nov. 23 to Mr. F. W. Crook, secretary, Caxton House, Westminster, S.W.

WEST HAM.—Dec. 2.—For erection of a handicraft centre at the Upton Lane school, for the West Ham Education Committee. Send applications and £1 deposit by Dec. 23 to Mr. William Jacques, A.R.I.B.A., 2 Fen Court, Fenchurch Street, E.C.

WOLVERHAMPTON.—Dec. 3.—For erection of a horse repository at the cattle market. Deposit £1 1s. Mr. G. Green, M.I.C.E., borough engineer, Town Hall, Wolverhampton.

TENDERS.

BANBURY.

For the erection of forty cottages at Paradise Road, for the Banbury Corporation. Messrs. GEOFFREY LUCAS & LODGE, architects, 14 Hart Street, Bloomsbury Square, London, W.C.

Willmott & Sons	£9,255 0 0
Orchard & Son	7,997 0 0
Hunt & Son	7,853 0 0
Drowley & Co.	7,700 0 0
Wilford & Sons	7,372 0 0
Capel & Sons	7,240 11 4
Griffiths	7,200 0 0
Corah & Son	7,140 0 0
Cooper	7,070 0 0
Kimberley	6,983 0 0
Pullen & Son	6,850 0 0
Higgs	6,788 0 0
Heap	6,638 0 0
Colborne	6,599 0 0
Bosworth & Lowe, Ashley Street, Nottingham (accepted)	6,572 0 0

EXETER.

For additions and alterations to the Royal West of England Institution for the Deaf and Dumb. Mr. J. JERMAN, F.R.I.B.A., architect, Exeter.

Spiller & Son	£3,610 0 0
Baker	3,137 5 0
Sleeman	3,373 19 0
Lea	3,038 17 10
Stile & Son	3,004 10 0
Smale & Son	2,999 0 0
Lake	2,950 0 0
Coles	2,946 0 0
Ham & Passmore	2,940 16 6
Woodman & Son	2,939 0 0
Setter & Son	2,886 0 0
Hooper	2,885 0 0
Mudge	2,866 0 0
Brealy	2,762 0 0
GEO. HERBERT, Exeter (accepted)	2,760 0 0

GRAYS.

For alterations and additions to Palmer's Endowed Schools. Mr. CHRISTOPHER M. SHINER, A.R.I.B.A., architect and surveyor, 7 Adam Street, W.C., and Grays, Essex.

Hammond & Son	£3,420 0 0
H. J. Carter, Ltd.	3,295 0 0
W. E. Davey	3,229 0 0
BROWN BROS., Grays (accepted)	2,840 0 0

KENT.

For the erection of a pair of semi-detached houses, for Mr. Thomas R. Wood, at Swanley Junction, Kent. Mr. GERALD E. BURGESS, architect, 1 Station Road, Swanley Junction.

Newport	£1,110	0	0
Howard	1,085	0	0
J. W. ELLINGHAM, Dartford (accepted)	1,070	0	0

LINGFIELD.

For the erection of the International Stores. Messrs. GEO. BAINES & SON, architects, 5 Clement's Inn, Strand, London, W.C.

Smith & Sons	£510	0	0
Jones & Andrews	500	0	0
Willmott & Sons	498	0	0
Bainbridge & Son	460	0	0
Battley & Sons	483	0	0
Hutchinson & Co.	464	6	0
Blake, Ltd.	400	2	2
LEWIS & BROS.*	388	0	0

*Accepted with modifications.

LONDON.

For rebuilding the Lewisham Bridge School, Lewisham, for the London County Council.

J. & C. Bowyer	£16,746	0	0
Akers & Co.	16,657	0	0
H. Lovatt, Ltd.	16,560	13	7
F. & H. F. Higgs	16,380	0	0
Holloway	16,114	0	0
Johnson & Co.	15,944	0	0
APPLEBY & SONS, Southwark Park (accepted)	14,802	0	0
Architect's estimate	16,077	0	0

For the supply, delivery and erection of the pumps in connection with the enlargement of Crossness pumping station, for the London County Council.

Thames Iron Works, Shipbuilding & Engineering Co.	£6,640	0	0
Rees Roturbo Manufacturing Co.	5,820	0	0
Fullerton, Hodgart & Barclay	5,700	0	0
Marshall, Osborne & Co.	5,416	12	0
Boving & Co., Ltd., Union Court, E.C.*	5,250	0	0
Cochrane	5,050	0	0
Hathorn, Davey & Co.	4,770	0	0
Vauxhall and West Hydraulic Engineering Co.	4,737	0	0

* Amended to £5,180, and recommended for acceptance.

For the incorporation of additional land in the Pocock Street school site, Southwark, and rearranging the playgrounds, for the London County Council.

Holliday & Greenwood	£1,859	0	0
Rice & Son	1,707	0	0
Garrett & Son	1,666	0	0
Groves	1,625	0	0
ROOME & Co., 36 Basinghall Street (recommended)	1,611	0	0
Architect's estimate	1,579	0	0

MAIDSTONE.

For the erection of an elementary school in Tonbridge Road. Mr. F. T. BUNTING, borough surveyor, Maidstone.

Corben & Co.	£2,050	0	0
Barden & Head	1,990	0	0
G. E. Wallis & Sons	1,988	0	0
Elmore & Son	1,925	0	0
Burrows	1,899	0	0
Cox Bros.	1,890	0	0
Pearce & Sons	1,848	0	0
Clarke & Epps	1,798	0	0
MARTIN & NEWMAN, Maidstone (accepted)	1,786	0	0

MORLEY.

For the work required in the alteration and addition to Victoria Mills. Mr. T. A. BUTTERY, Lic.R.I.B.A., architect, Morley, and Leeds.

Accepted tenders.

J. Clegg & Sons, masons, joiners, and plasterers	£890	0	0
A. W. Clegg, plumber	84	15	0
J. Kellett, slater	55	0	0

All of Morley.

SLOUGH.

For the erection of buildings, furnaces, boilers and chimney, &c., at the pumping station, Chalvey, for the Slough Urban District Council. The TOWN SURVEYOR, Slough.

Buildings.

Poultons & Timmis	£578	0	0
Acock & Co.	575	0	0
Fassnidge & Sons	558	0	0
Goddard & Sons	547	0	0
Fitt	547	0	0
Bowyer	518	0	0
Warrington	511	0	0
H. STREET, Slough (accepted)	507	0	0

Furnaces.

Meldrums	£1,902	0	0
Warrington	1,687	0	0
Street	1,661	0	0
Poultons & Timmis	1,659	0	0
Acock & Co.	1,584	0	0
GOODRICH & HAMLYN, Strand, W.C. (accepted)	1,490	0	0

WOMBWELL.

For the erection of public baths for the Urban District Council. Mr. H. BURGESS, architect, Queen Anne's Chambers, Broadway, Westminster.

Accepted tenders.

A. Taylor, Wombwell, bricklayer and mason	£2,196	0	0
Buckley (London), Ltd., Holborn, London engineering	1,550	19	7
G. Porter & Sons, Worsbro' Dale, carpenters and joiners	1,000	5	2
Fram Fireproof Construction Co., Manchester, reinforced concrete	728	0	0
Fram Fireproof Construction Co., steel-work	400	0	0
J. Snowden & Sons, Barnsley, plumbers and glaziers	244	0	0
E. Fleming, plasterer	201	1	7
E. Fleming, Barnsley, slater	132	17	8
G. Thompson, Leeds, painter	102	16	0

SCHOOL PLAYGROUNDS.

THE Board of Education have issued the report of the Departmental Committee which inquired into the question of playground accommodation for public elementary schools. The report gives the history of the provision of playgrounds, and shows that the object was to enable children to have suitable recreation and physical exercise. The Committee are of opinion that a field or park was more suitable than a playground for the organisation of games, but, unfortunately, the provision made in fields and parks was at present lamentably deficient. The Committee therefore express the opinion that when new schools are being planned every effort should be made to secure facilities for games on a much more abundant scale than has been the case in the past. The Committee's main recommendations are as follows:—

NEW SCHOOLS.

1. That the shape of the playgrounds should be more carefully scrutinised, and that passages, fore-courts, &c., should not be counted as forming part of the minimum space required.

2. (a) That except in very small schools playgrounds should be separate for boys and girls. (b) That the playgrounds for girls and infants need not be separated. (c) That where girls and infants use the same playground the area must be sufficient for the total number of children, calculated in accordance with the following recommendations.

3. That where other provision is made for games:—
(a) Each undivided playground for 200 children and upwards should provide—(i) 20 square feet for each older child; (ii) 16 square feet for each infant. (b) Each undivided playground for less than 200 children should provide 2,000 square feet, together with—(i) 10 square feet for each older child; (ii) 6 square feet for each infant.

4. That where no other provision is made for games:—
(a) Each undivided playground for 200 children and upwards should provide—(i) 30 square feet for each older child; (ii) 16 square feet for each infant. (b) Each undivided playground for less than 200 children should provide 2,000 square

feet, together with—(i) 20 square feet for each older child; (ii) 6 square feet for each infant.

5. That—(a) Where a site is expensive (regard being had to the price of land and resources of the authority) the Board may accept a playground below the measurements specified in section IV. (a) and (b) above. (b) The precise degree of reduction from this standard shall be decided on the merits of each case, but in no case shall the reduction bring the playground below the measurements specified in section III. (a) and (b).

EXISTING SCHOOLS.

6. Every school should have space for each class to take its lessons in physical exercises in the playground or an equivalent space.

7. After 1920 a playground allowing less than 10 square feet for each child should be classed as "insufficient."

8. After 1925 a playground allowing less than 15 square feet for each child should be classed as "insufficient."

9. Enlargements of buildings should not, except in unusual circumstances, be allowed if it would result in a reduction of the playground below the limits specified in sections III. and IV. Reduction of playground below these limits by the erection of buildings for special subjects should not be allowed.

GENERAL.

10. A roof playground should be accepted, and if it covers virtually the whole of the building should be regarded as satisfying the requirements of the children, other than infants, occupying one floor.

ST. ANDREW'S (R.C.) HOSPITAL, DOLLIS HILL LANE, N.W.

So far, the Metropolis has had the benefit of but one Roman Catholic hospital—that of SS. John and Elizabeth in St. John's Wood. With the increasing home membership of the old faith and with an increasing influx from abroad, the need of an additional institution to cope with sickness and disease becomes manifest.

It is one of the pleasant qualities of humanity that this need ever finds its benefactor; in the present instance the community owes it to an anonymous lady donor that this fine institution of St. Andrew's Hospital has risen from the soil in North-West London. A very capable architect has been secured in the person of Mr. R. L. Curtis, F.S.I., the contractors for the work (costing some £40,000) being Messrs. Patman & Fotheringham.

It is about three years since operations on the site were commenced, but the actual setting-out of the hospital block dates back only twenty months, and it is anticipated that patients will be admitted about or shortly after Christmas. With Portland stone facing for the centre and with Mr. Mark Gentry's red bricks for general facings, the quiet Renaissance elevations present a very pleasing appearance. Delabole slates are used for the roof coverings, the dome over the chapel being supplied with copper by the well-known firm of Ewart. At present only the central (administrative) block and the right (east) wing are erected. The wards themselves are on two floors consisting of public, private, and (in a separate pavilion) isolation wards, the latter for patients detected or suspected as being infectious subsequent to admission, for the hospital is merely for general medical and surgical cases.

In a technical paper, such as *The Architect*, it is unnecessary to describe the accommodation and lay-out of a hospital (cottage, as in this case, or otherwise); it suffices to say that everything is up to date and has been well thought out. When we recognise that Messrs. Dent & Hellyer supplied the sanitary fittings (other than the baths, which were obtained from Messrs. Shanks), the Art Pavements Decoration Company being responsible for the terrazzo mosaic, the electric lifts being by Messrs. Waygood, wrought ironwork and railings by Messrs. Bayliss, Jones & Bayliss, and oak fencing by Messrs. E. C. White & Son, we may assume that satisfaction is likely to ensue. If we are to criticize at all, we would express surprise that in fitting all the windows for reversible treatment some system was not employed where loose parts do not form an integral feature. The "N.A.P." fittings are well known, it is true, but they are not as good as some known to us where there are no loose parts liable to be lost; however, we do not grudge Messrs. Lockerbie & Wilkinson the extensive order entailed. The ferro-concrete floors and stairs are the work of the Cubitt Concrete Construction Company. The heating

and hydrants (of which there are twelve installed) are the work of Messrs. Jeffreys & Co., Ltd.

For the hall and staircase a terrazzo dado has been employed, and this material is largely used for the flooring. The complete provision of electric lighting and telephones is the work of Messrs. Bakewell & Son.

The operating theatre is being fitted up with elbow-action lavatories, glass shelves, and all requisite conveniences. The system for ventilating the theatre is noteworthy, fresh air cleaned and warmed being admitted up a large duct and drawn across the theatre by the action of an exhaust fan, placed so that there shall be a thorough and continuous change of air. The neat ironmongery is supplied by Messrs. Colledge & Bridgen.

A pleasant feature in the hospital is the chapel, with its reinforced columns and beams; it is effective both within and without. The altar table has been transferred from the Convent of the Holy Rood, Regent's Park. Adjoining the chapel is a confessional and a sacristy; the chaplain's house is at the entrance of the grounds.

The walls of the sisters' and nurses' day and bedrooms, the wards, and other parts (in three-coat lime and hair, and with dadoes in Keene's cement) are all very quietly but cheerfully decorated in tones of distemper, which will eventually be replaced by enamel paint such as is used for the joinery in general. Offices have the walls lined with white glazed tiles.

All corners throughout are rounded, and there is a general appearance of germ resistance that is very satisfying to the sanitarian, except as regards the use of false ceilings below the flat covering the isolation pavilion.

The water-storage capacity in cisterns is 2,400 gallons, besides the provision of compensating tanks. The buildings are protected against the ravages of lightning by conductors supplied by Messrs. Ewart & Son.

The wards are heated by the well-known open-fire stoves with horizontal subfloor flues, and the stoves in general throughout the buildings are supplied by the Teale Fireplace Company. It would seem almost worth while to be ill, when one is a Roman Catholic of the Metropolis, if it connotes being a patient in such a hospital as the one described.

GLASGOW BUILDING TRADES EMPLOYERS' COUNCIL.

A MEETING of the Glasgow and West of Scotland Building Trades Employers' Council was held on the 18th inst. in the secretary's office, 204 St. Vincent Street, Glasgow. Mr. William H. Baxter, Chairman of the Council, occupied the chair. The Secretary reported regarding the negotiations which had passed since last meeting with the Institute of Measurers as to the alterations on the conditions of building contracts. The report was to the effect that, with the exception of one of the conditions, the Institute of Measurers had agreed to the conditions submitted by the Council. After some discussion, it was agreed to submit an amended proposal to the Institute of Measurers in lieu of the condition objected to by them. A report was submitted from several of the affiliated associations regarding the proposal made by the Board of Trade under the National Insurance Act, in virtue of which the Board of Trade would undertake on behalf of the employers the custody, stamping, distribution, and exchanging of contribution cards and unemployment books. After consideration it was agreed in the meantime not to adopt the proposal of the Board of Trade, as the Council were of opinion that the arrangements at present in force had not had a fair trial. The Secretary, in referring to a communication sent to the Town Clerk strongly opposing the Corporation adopting the single-contractor method of executing the addition to the Municipal Buildings, explained that he had received a letter from the Town Clerk stating that the matter would be brought before the Buildings Committee when the question of preparing the necessary specifications and schedules came to be considered. A proposal to have a meeting of the members of the various associations affiliated with the Council was discussed, and it was agreed that a meeting should be held in February, at which the annual report of the Council would be submitted for consideration and any matters of general interest to the building trade brought up for discussion.

THE Worcester City Council are about to apply for a loan of £7,400 to carry out the extension of the boiler-house in Hylton Road, together with the supply of new plant.



The late Mr. NORMAN SHAW, R.A. For obituary notice, see p. 305. Reduction of a cartoon in *The Architect*, July 18, 1909.

THE BRITISH FIRE PREVENTION COMMITTEE.

THE British Fire Prevention Committee has strengthened its Council, the various vacancies being influentially filled. According to the result of the postal ballot, which has just been announced, Lord Montagu of Beaulieu, J.P., V.D., D.L., will take the place of the late Major-General Festing, C.B., F.R.S.; Sir Aston Webb, C.V.O., C.B., R.A., will take the place of Sir John Taylor, K.C.B., deceased (formerly principal architect of H.M. Office of Works); Sir Maurice Fitzmaurice, C.M.G., M.Inst.C.E., Chief Engineer, London County Council, will replace Mr. Alexander Ross, M.Inst.C.E., retired; Mr. W. Slingo, Engineer-in-Chief, General Post Office, will replace Mr. E. G. Rivers, I.S.O., late Chief Engineer, H.M. Office of Works, retired; and Mr. Hippolyte J. Blanc, R.S.A., F.R.I.B.A., will replace Mr. Spencer Harty, M.Inst.C.E., who has recently retired from the Dublin Corporation Surveyorship.

Of the members of Council well known in the architectural and engineering professions re-elected to the Council are Sir W. Henry Preece, K.C.B., F.R.S., Sir Henry Tanner, C.B., I.S.O. (Principal Architect to H.M. Office of Works), Sir Arthur Whitelegge, K.C.B., Major Cooper-Key (Chief Inspector Explosives), and Mr. R. A. Redmayne, C.B., M.Sc. (Chief Inspector of Mines), of the Home Office, Colonel Sir Edward Raban, K.C.B., R.E., of the Admiralty, Sir Boverton Redwood, Bart., D.Sc., Major W. O'Meara, C.M.G. (General Post Office), Sir James Szlumper,

M.Inst.C.E., Mr. Alexander Siemens, M.Inst.C.E., Mr. W. H. Hunter, M.Inst.C.E., Sir Douglas Fox, J.P., M.Inst.C.E., Sir Henry Trueman Wood, M.A., of the Royal Society of Arts; whilst amongst those closely connected with the fire service are the Earl of Lonsborough, K.C.V.O., and Rear-Admiral J. de C. Hamilton, M.V.O. (late London Fire Brigade).

The Executive as re-elected includes, among others, Mr. Edwin O. Sachs, F.R.S.Ed., as Chairman; Mr. Horace S. Folker, F.A.I., as Honorary Treasurer; Mr. Ellis Marsland, as General Honorary Secretary; Mr. J. W. Restler, M.Inst.C.E. (of the Metropolitan Water Board); Hon. Chief Officer J. Herbert Dyer, Mr. Max Clarke, F.R.I.B.A., and Mr. Percy Collins, J.P.

The various standing sub-committees have been augmented, and include a number of well-known fire brigade officers, both professional and volunteer.

The opportunity is taken to remind those interested that the British Fire Prevention Committee was formally founded on November 20, 1897, the day of the Cripplegate fire, and has thus just completed its fifteenth year.

THE Birr No. 1 Council (Ireland) have adopted a town-planning scheme for the rural towns and villages of the Union. It is proposed to build 234 cottages on the plan of those which have been erected at Roscrea.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

CHESHIRE.

Helsby.—Two villas, Youd's Lane, for Mr. Calvey.
Macclesfield.—Guardians' Nurses' Home. Mr. J. Clayton, contractor.
Sale.—Council School for 300 places, Ashton-upon-Mersey (£6,500).

CORNWALL.

St. Austell.—Training College.

CUMBERLAND.

Cummersdale.—Printing works: additions for Messrs. Stead & McAlpine.

DERBYSHIRE.

Gresley.—House and shop, York Road, for Mr. J. J. Norton.
Parwich.—Six working-class dwellings (£1,000).
Woodville.—Six houses, Swadlincote Road, for Mr. J. Godfrey.

DEVON.

Exeter.—Royal West of England Deaf and Dumb Institution: additions and alterations. Mr. J. Jerman, F.R.I.B.A., architect.
Torquay.—Hotel, shops, &c., Babbacombe. Mr. F. G. Moore, architect.

ESSEX.

Grays.—Church, East Thurrock Road and Arthur Street. Hospital pavilion and porter's cottage. Mr. C. M. Shiner, A.R.I.B.A. (of London), architect.
Southend-on-Sea.—Four houses, Marguerite Drive, for Mr. A. J. Lucking.
Two houses, Thorpe Bay Gardens, for Mr. C. Matthews.
Two houses, Lonsdale Road, for Mr. C. T. Standen.
Two houses, Tyrone Road, for Messrs. J. Warren & Co.
Three houses, Upper Whitegate Road, for Mr. E. A. Cave.
Fourteen houses, Victoria Road, for Mr. G. Pedwell, junr.
Motor garage, Clarence Road, for Mr. F. Webster.
West Ham.—"The Cedars," Portway: additions and alterations for County Territorial Force Association.

HAMPSHIRE.

Portsmouth.—Portsmouth and South Hants Eye and Ear Infirmary: extensions.

HERTFORDSHIRE.

Bushey.—Banking premises, High Street. Mr. A. C. Blomfield, F.R.I.B.A. (of London), architect.
Haileybury.—College: additions. Messrs. Simpson & Ayrton, R.R.I.B.A. (of London), architects.

LANCASHIRE.

Dalton-in-Furness.—Cinematograph Theatre, for the Backhouse Drinkwater Picture Palaces, Ltd.

LEICESTERSHIRE.

Leicester.—St. Andrew's Church schools: enlargement.

LINCOLNSHIRE.

Bourne.—Workhouse isolation hospital (£4,350) and pavilion (£300).
Lincoln.—Public Library. Messrs. W. Wright & Son, contractors.

MIDDLESEX.

Ealing.—Cinematograph Theatre (for 1,200 sittings), Northfield Lane (£3,500). Mr. G. P. Pratt, A.R.I.B.A. (of Acton), architect.
Wesleyan Church, &c., Lindfield Road, Brentham (£2,800). Mr. J. W. Bateson, A.R.I.B.A. (of London), architect. Messrs. J. Smith & Sons (of Norwood), contractors.
Pinner.—"Landards," Royston Park: additions for Mr. H. R. Arnold.

NORTHAMPTONSHIRE.

Northampton.—Girls' Secondary School. Messrs. Pullen, contractors (£16,655).
Thirty-six workmen's houses, Kingsthorpe.

NOTTINGHAMSHIRE.

Sutton-in-Ashfield.—Fire station. Council surveyor.

STAFFORDSHIRE.

Burslem.—Police station.
Cheadle.—Court House (£3,000).

Cheddleton.—Lunatic asylum: Nurses' Home.

Fenton.—Police station

Tunstall.—Business premises, Station Road. Messrs. Watkin & Adams (of Stoke), architects.

Wolverhampton.—District and Staffordshire General Hospital: reconstruction and extension (£54,100).

SURREY.

Barnes.—Additions to "Hindley," Christ Church Road, for Mr. R. B. Rowell.

Four houses, Lower Richmond Road, for Mr. G. W. F. Bates.

House, Madrid Road, for Mr. A. Harvey.

Five houses, Melville Road, for Mr. C. J. Kerven.

Additions to "Queensmead," Sheen Road, for Mr. S. Hutchins.

Alterations to "The Grange," Stonehill Road, for Messrs. Roberts & Co., Ltd.

Godalming.—Church Room (£1,500).

Mortlake.—"The Two Brewers," High Street, additions and alterations, for Messrs. Watney, Combe, Reid & Co.

Richmond.—No. 8 Perseverance Place: rebuilding. Mr. T. W. Aldwinckle, F.R.I.B.A. (of London), architect.

No. 1 Albert Road: alterations for Messrs. Drew & Son.

No. 99 Kew Road: additions and alterations. Messrs. Brewer, Smith & Brewer, architects.

Sutton.—Girls' County School.

Secondary School.

Woking.—Technical Institute and Secondary School.

SUSSEX.

Brighton.—Y.M.C.A. premises, Steine House: extensions (£5,000).

Cuckfield.—Workmen's dwellings.

Wivelsfield.—Reading-room.

WARWICKSHIRE.

Birmingham.—Warehouse, &c. Messrs. Riley & Smith, architects.

WORCESTERSHIRE.

Bromsgrove.—District Council stabling, stores, &c. (£1,690).

Droitwich.—Workmen's houses.

King's Heath.—Monyhull Colony: extensions. Messrs. C. Whitwell & Son (of Birmingham), architects.

Redditch.—Cinematograph Theatre, Alcester Street, for Mr. C. H. Baines (of London).

Wolverley.—Council School.

Worcester.—Electricity Department: extension of boiler house, Hylton Road (£1,200). City Engineer.

YORKSHIRE.

Alne.—Wesleyan Sunday school (£500).

Carlton and Faceby.—Council School.

Goole.—Town Hall (£7,650).

Salisbury-by-the-Sea.—Council School: extension. Mr. J. Hutton, contractor (£515).

Sheffield.—Wesleyan school, Ellesmere Road (£2,500).

Thirsk.—Secondary school for 100 places.

Wombwell.—Parish Church completion.

Yarm.—Grammar school. Messrs. E. Dobson & Son (of Stokesley), contractors (£3,187).

WALES.

Blaenrhondda.—Branch Institute for the Fernhill and Blaenrhondda workmen. Mr. W. D. Morgan (of Penre), architect.

Ely.—Workhouse: engine house. Mr. E. Seward, F.R.I.B.A. (of Cardiff), architect.

Rhondda.—Council offices.

SCOTLAND.

Ayr.—Parish Church Hall extension, Wallacetown.

Cathcart.—Double villa: Old Cathcart Road, for Mr. Stephen Mitchell (of Glasgow and Kippen).

Clarkston.—Two double cottages, Overlee, for Messrs. J. & R. C. Merry.

Clydebank.—Fire station and copper store, for Messrs. John Brown & Co.

Dundee.—Semi-detached cottages, Bank Avenue, for Mr. C. Gray.

Semi-detached cottages, Fingask Street, for Messrs. J. Foggie & Son.

Edinburgh.—Labour Exchange, Lauriston Place, Tollcross (£8,000). H.M. Office of Works.

Gartcosh.—Board school (£6,400).

Giffnock.—Double villa, Eastwood Avenue, for Messrs. G. Dixon & Sons.

SCOTLAND—continued.

Glasgow.—Veterinary College, Buccleuch Street: alterations (£2,300).

Buildings, Hydepark Street, for Messrs. Bilsland Bros.

Works, Paton Street, Dennistown, for Messrs. J. Wallace & Sons, Ltd. (£20,000).

Four double villas, Mount Annan Drive, Mount Florida. Messrs. Sproul & Sons (of Cambuslang), builders.

Three houses, Netheraton Road, Mount Florida. Mr. R. Henderson (of Glasgow), architect.

Five terrace houses, Mossgiel Road, Newlands, for Messrs. G. Eadie & Sons.

Works, Harvey Street, Yoker: additions for Messrs. Halley's Industrial Motors, Ltd.

Paisley.—Double villa, Arkleston Road, for Mr. A. M'Kechnie.

Nos. 138 and 139 Causeyside: additions and alterations for the Provident Co-operative Society.

Works, Lonend: reconstruction for Gleniffer Soap Co.

Portobello.—Twelve cottages, Westbank Place, for Mr. W. Anderson.

IRELAND.

Moneygall.—Fourteen cottages under town planning scheme; also at

Shinrone.—Twenty cottages.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 20,202. Sept. 12, 1911.—Improvements in wall construction for houses and other buildings. J. W. Moseley, Pennine Edge, Hill Top, Romiley, Cheshire. This invention relates to improvements in the construction of walls for

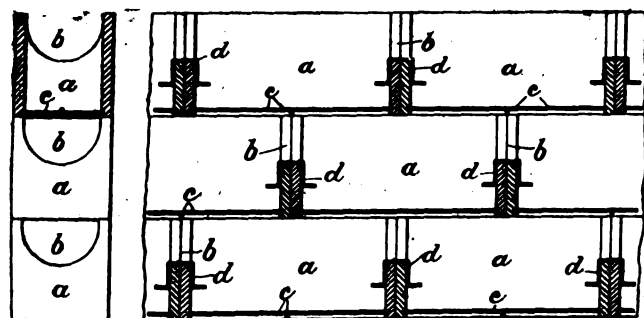


Fig. 2.

Fig. 1.

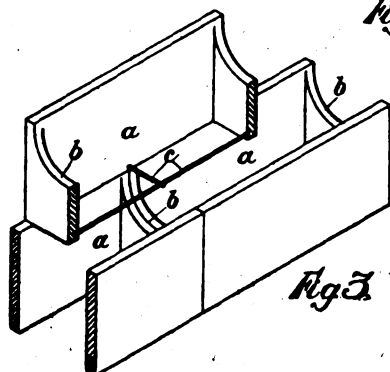


Fig. 3.

architectural works, the object being to provide an improved method of construction applicable to ferro-concrete or concrete. Hollow concrete troughs are laid in courses and end to end, like ordinary masonry, and when filled with concrete a monolithic structure is secured, and the troughs remain in the wall, and form the facing thereof. The troughs have two sides, connected at the ends with strong webs designed to support the sides, enabling them to resist lateral stresses caused by the filling and tamping of the wet concrete and expansion when setting. These webs are also designed to allow a large core opening (half the depth of the trough at the lowest point) for the concrete filling to pass over the joints and clamp the ends of the troughs together when laid end to end. Metal ties further strengthen the joints, and also horizontal and lateral rods to connect the sides and ends of troughs to the bottom. Fig. 1 is a longitudinal section of

a wall or portion of a wall. Fig. 2 an end elevation of same partly in section. Fig. 3 a perspective view of a portion of a wall showing two of the troughs broken or cut through, one longitudinally and the other laterally. *a* indicates a number of hollow troughs open at the top, the sides connected with webbed ends designed with core opening, *b*, and the bottoms are open and strengthened with longitudinal and transverse rods, *c*. The metal ties, *d*, are used to further strengthen the joints when required. Sept. 18, 1912.

PATENT SPECIFICATIONS PUBLISHED
NOVEMBER 14, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 14,986. Dec. 27, 1911.—S. E. Spencer, 21 Blakesley Avenue, Ealing, W. Fastening for windows.

21,011. Sept. 22, 1911.—William Thompson, 54 Duke Street, Birkenhead. Manufacture of pressed or stamped metal panels.

23,266. Oct. 21, 1911.—Date claimed under International Convention, Feb. 21, 1911. A. Muggia, 135 Via Giovanni Lanza, Rome. Production of mosaics.

23,342. Oct. 23, 1911.—T. A. Watson, Bosigran, Whytecliff Road, Purley. Hollow piles.

23,403. Oct. 24, 1911.—Percy Higson, 42 Spring Gardens, Manchester, and Thos. Hughes, 7 Stanley Street, Salford. Fire-resisting doors and automatic fire extinguishing apparatus.

24,074. Oct. 31, 1911.—David Baxter, Inveresk, Crompton Avenue, Cathcart, and R. L. Baxter, 150 Bothwell Street, Glasgow. Treads for stairs, steps, and other surfaces.

24,445. Nov. 3, 1911.—A. P. Nichols, 130 25th Avenue North, Seattle, King, Washington, U.S.A. Electric water heaters.

24,832. Nov. 8, 1911.—James Howorth & Co., Ltd., and F. C. Howorth, Victoria Works, Farnworth, Lancs. Dust collectors and air filters.

27,479. April 3, 1912.—Alexander Struthers, 2 Alfriston Road, Clapham Common, West Side, S.W. Window sashes.

28,503. Dec. 18, 1911.—Pigments, Ltd., and W. P. Thompson, 6 Lord Street, Liverpool. Lead pigments.

1,638. Jan. 20, 1912.—C. T. Cuss, 25 Evelyn Street, Swindon, Wilts. Fire extinguishers.

1,997. Jan. 25, 1912.—F. R. Stone, 1 Clift Road, Ashton Gate, Bristol. Device for securing corrugated sheets to roofs.

2,764. Feb. 2, 1912.—H. S. Martin, 8 Rock Park, Rock Ferry, Chester. Electrical heating and radiating apparatus.

3,088. Feb. 7, 1912.—Herbert Clarke, 74 Pinnox Street, Tunstall, Staffs. Dies for tile and like presses.

3,276. Feb. 9, 1912.—Alfred Browning, Halesowen Road, Old Hill, Staffs., and Harry Tott, 81 High Street, Ponder's End. Sewage distributors.

4,233. Feb. 20, 1912.—Date claimed under Convention, Sept. 11, 1911.—H. L. C. Neuilly, 8 Rue Nouvelle, Boulevard de l'Hopital, Paris. Electro-magnetic device for warning against theft and burglary.

5,745. March 7, 1912.—P. D. Beard, 49 Church Street, Bridgwater, Somerset. Drawer-fitting and various sand-papery machines for cabinet-making and the like.

6,597. March 16, 1912.—Date claimed under International Convention, July 25, 1911. Max Binetter, Kismanya, Hungary. Manufacture of artificial stone by a cold method.

6,953. March 21, 1912.—Joseph Southall, Enderlie, Selbourne Road, Worcester. Heating stoves.

12,063 and 12,064. May 21, 1912.—E. Le Bas and H. T. Garvie, Dock House, Billiter Street. Sheet-metal piling.

13,784. June 12, 1912.—Date claimed under International Convention, June 14, 1911. J. & C. G. Bolinders Mekaniska Verkstads Aktiebolag, 10 Kaplansbacken, Stockholm. Cutters for tonguing wood.

14,084. June 17, 1912.—Michael Cushion and J. Lyons & Co., Ltd., Cadby Hall, Hammersmith Broadway, W. Taps or cocks.

17,861. Aug. 1, 1912.—D. N. Alexeeff, 14 Krasnoprudnaja Street, Moscow. Making and placing concrete piles.

18,667. Aug. 14, 1912.—Paul Hellmuth and P. J. Becker, Gerolstein, Germany. Apparatus for use in cutting sheets of glass.

A FACULTY has been granted by the Carlisle Consistory Court for the proposed enlargement of the parish church of St. James's, Arnside, at a cost of about £2,000. The architects are Messrs. Austin & Paley, of Lancaster.

FIRE ESCAPE EXITS.

RECENT fatal fires have demonstrated the disadvantage of being unprepared with two means of escape, so that one is available in the event of the other being blocked with smoke or flame, and in this concern our advertisement pages have drawn attention to the invention of Mr. Heathman, of Parson's Green, Fulham, who makes and fixes an excellent system of lever attachments to ladders, so that as the ladder is folded up to lie flat under the ceiling it closes and holds the roof trapdoor secure against wind, rain, and burglars, while in lowering the ladder for service the trapdoor automatically and fully opens by the counterweight of the ladder. Some hundreds have been fixed by Heathman & Co., and timely provision may give security to persons in buildings of every character.

HAMPSHIRE AND ISLE OF WIGHT ASSOCIATION OF ARCHITECTS.

A MEETING of the Hampshire and Isle of Wight Association of Architects was held at Winchester Castle on Tuesday, Sir William Portal, Bart., F.S.A., presiding. Twenty-five new members were elected, and arrangements for meetings at Portsmouth (December 17), Bournemouth (January), and Southampton (February) were discussed. After viewing, at the President's suggestion, the ancient sally-port of the Castle, the party proceeded to the cathedral, where they were met by Mr. T. G. Jackson, R.A., who conducted them round the building, inside and out, and returned with them to the Castle. An address on the objects of the Association by the President was followed by one by Mr. Jackson on the work at the cathedral, and in the course of discussion the parlous condition of St. Sophia was described. The Association, although only founded this year, has already a representative membership in the county, Southampton alone having sixteen members.

VARIETIES.

THE Doncaster Corporation at their last meeting decided to apply to the Local Government Board for sanction to borrow £28,895 for the erection of sixty houses at Balby and sixty-four houses in Carr House Road. The tender of Mr. A. Thompson, amounting to £25,897, has been conditionally accepted.

MR. H. HOWARD HUMPHREYS, M.Inst.C.E., Westminster, has prepared a sewerage scheme for the combined parishes of Crowthorne and Sandhurst. The estimate for the scheme is £55,273, which will include sewers 26.36 miles, manholes, &c., £33,356; pumping plants, engine houses for Crowthorne £1,650, and Sandhurst £2,800 respectively; purification works, £8,000.

THE bricklayers, carpenters, and labourers in the building trade at Dudley have approached their employers with a view to securing advances in wages. The bricklayers and carpenters ask for an increase of a halfpenny per hour and the labourers a penny per hour. It is five years since the last advances were conceded, and the men point out that in the meantime the cost of living has considerably increased.

At the monthly meeting of the Lancashire Education Committee attention was called to a tender amounting to £5,252 for the erection of a new school at Waterloo (Ashton-under-Lyne). A member pointed out that the Local Area Committee did not recommend its acceptance, but one sent in by a local firm, which was £2 12s. 6d. more. The County Committee, however, having invariably acted on the principle that if the contractor who gave the lowest tender was satisfactory it should be accepted, whether he was a local man or not, now recommended the acceptance of the £5,252 tender. This proposal was agreed to on Monday last.

We regret to announce the death of Mr. Charles D. Phillips, J.P., the proprietor of the Emlyn Engineering Works, Newport, Mon., and of "Phillips' Monthly Engineering Register." The large business which Mr. Phillips founded and successfully carried on for over forty years will be continued in the same manner under the joint management of his eldest son, Mr. C. Godfrey Phillips, and of Mr. T. Morris Prosser (who has been with the firm for more than thirty years). In the building trades the name of Mr. Charles D. Phillips is well known as the inventor of the "Lock-Jaw Tile."

It is announced by the Trade Union Congress Parliamentary Committee in regard to the recent ballot on the question of the amalgamation of the building trade unions

that any of the societies which did not take part in the recent vote may send delegates to the adjourned conference in December, provided that their members have been balloted for in the meantime. In the recent voting, out of 117,370 papers supplied, only 43,697 were used, leaving 73,673 not accounted for. The requisite two-thirds majority was not obtained. It is now proposed that a central fighting fund might be established, to be controlled by an executive committee representative of the subscribing societies, leaving complete autonomy to each union as far as its friendly benefits are concerned.

OUR contemporary the *Electrical Review* has just been celebrating its fortieth birthday. On November 15, 1872, its first modest issue appeared. Since that time it has grown and prospered like the industry it represents. Instead of a small monthly pioneer pamphlet, it is now a vigorous weekly paper, with about three times the amount of editorial matter and over ten times the number of advertisement pages. An appreciative article is contributed by Sir William H. Preece, K.C.B., F.R.S., whose electrical career began in 1852, and who has known the publication since its inauguration, and for a short time edited it. Sir William Preece says: "The life of the *Electrical Review* is a history of the life of the electrical industry."

TRADE NOTES.

A LARGE clock with peal of eight bells has just been erected in Brilley Church, Herefordshire. The clock has been fitted with the latest improvements and made by Messrs. John Smith & Sons, Midland Clock Works, Derby. The bells were cast by Messrs. Mears & Stainbank, London.

THE Imperial Trade Correspondent at Toronto, Canada (Mr. F. W. Field) has forwarded to the *Board of Trade Journal* an extract from the local press containing a description of the proposed municipal abattoir at Toronto. According to this description, the building is to be absolutely fireproof and sanitary; glazed bricks and tiles will enter very largely into its construction, whilst vitrified bricks will be used for the floors. The name and address of the United States firm of architects who have prepared the plans, &c., for the building may be obtained by British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, London, E.C.

A CHIME of eight bells, weighing 53 cwt., is to be erected at Duncricht House, near Aberdeen, the seat of Lord and Lady Cowdray, by Messrs. John Warner & Sons, of "The Spitalfields Foundry," London, E.C., at a total cost of £1,000. The bells are to be operated by the firm's patent electrical apparatus, which combines a mechanical device for tune-playing with a clavier or keyboard to be operated by hand. The carillon will be worked from the electric lighting mains. These bells are a great boon for small churches where it is impossible to erect a ringing bell, and also for schools and public buildings.

THE Invincible Talbot Company celebrated the conclusion of the Olympia Motor Show on Saturday by an attack upon the records at Brooklands. The car, which was a 25 h.p., with the ordinary standard engine catalogued and supplied by Messrs. Clement Talbot, Ltd., first of all put up the terrific speed of 113.28 miles per hour. The flying kilometer was done at 112.81, the mile at 111.73 miles per hour, while her fastest lap (about three miles) was completed at 109.43 miles per hour. When, at the finish, the driver cut off his power the car ran with her own velocity a distance of nearly two miles. The previous record for four-inch engines was beaten by no less than 26 miles per hour, and with the exception of a 200-h.p. Benz, the 25-h.p. Talbot on Saturday secured the record of being the fastest car that has ever travelled on the Brooklands track.

A SMALL preliminary catalogue has been sent to us showing the Bayard cars, of which the sole concessionaires for A. Clement-Bayard, Paris, are Bayard Cars, Ltd., of 98 High Street, Marylebone, W. The first car illustrated and described is an 8-h.p. four-cylinder Bayard, which may be purchased, fitted with a two-seater torpedo body, for the low price of £197. Next comes a 10-h.p. four-cylinder car, which is sold for £241 if fitted with a four-seater torpedo body. The biggest and most expensive car in the catalogue is a 14-h.p. car. The price of the chassis is £308, and, if fitted with a torpedo body, £380. The cars seem of compact design. The French firm have appropriated that fine motto, "Sans peur et sans reproche."

THE Architect and Contract Reporter.

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Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made. Subscription, \$5.20.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 p.m. on Thursdays.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Cradock Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

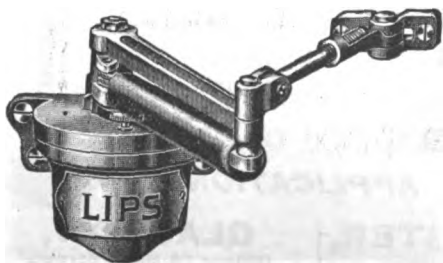
CONTRACTS OPEN.

ALPHINGTON.—Dec. 4.—For erection of a house at Alphonington, near Exeter. Deposit £3. Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

BIRKENHEAD.—Dec. 3.—For plastering, &c., of dayrooms, dormitories, &c., on the female side of the main building of the workhouse, Tranmere. The Poor-Law Offices, Birkenhead.

(Continued on page 7.)

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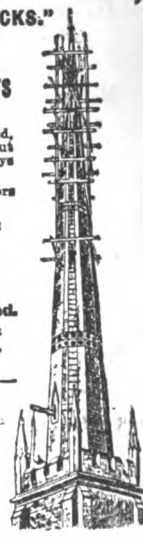
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BIRMINGHAM.—Dec. 5.—For the erection of offices and messroom at the Central Station, for the Midland Railway Co. The Engineer's Office, Derby Station.

BLANDFORD.—Dec. 7.—For erection of combined yeomanry and infantry headquarters, with sergeant-instructor's house, for the Territorial Force Association of the County of Dorset. Deposit £1 1s. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, Dorchester.

CARSHALTON.—Dec. 4.—For the erection of verandahs at the Queen Mary's Hospital, Carshalton, Surrey, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

CAMBORNE.—Dec. 7.—For erection and completion of a residence. Mr. S. Hill, architect, Green Lane, Redruth.

DOVER.—Dec. 14.—For additions and alterations to the girls' department of St. Martin's Council School at Markland Road, for the Town Council. Deposit £2 2s. Mr. W. C. Hawke, A.M.I.C.E., borough engineer, Maison Dieu House, Biggin Street, Dover.

HEREFORD.—Dec. 10.—For erection of a grain shed, offices, &c., for the Great Western Railway Co. The Engineer at Gloucester Station.

HUDDERSFIELD.—Dec. 4.—For erection of additions and alterations to Primrose Hill Working Men's Club. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

IRELAND.—Dec. 3.—The Pembroke Urban District Council are prepared to consider tenders for the construction of a refuse destructor at their electricity works, South Lotts Road. Charge 5s. The Town Hall, Ballsbridge, County Dublin.

IRELAND.—Dec. 12.—For building twenty-two single and eighteen double cottages for labourers, and fencing fifty-eight plots, for the Dungannon Rural District Council. Charge 5s. The Clerk to the Rural District Council, Dungannon.

IRELAND.—Dec. 17.—For erection and furnishing of National School Buildings at Kilcoosey, county Leitrim. The Office of Public Works, Dublin, and the Royal Irish Constabulary, Dromahair.

IRELAND.—Dec. 20.—Tenders for erection and furnishing of National school buildings at Milltownpass, county Westmeath. The Office of Public Works, Dublin, and the Royal Irish Constabulary Barracks, Rochfort Bridge.

LEEDS.—Dec. 2.—For the whole or any portion of the works required in erection of business premises, New York Street, for Messrs. C. A. Wilkinson & Co. Forward names and trades by Dec. 2 to Mr. W. M. Coggill, architect, 4 Aire-dale Terrace, Stourton, Leeds.

LEICESTER.—Dec. 3.—For alterations and extension to Leicester labour exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Manager, Leicester Labour Exchange, and H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Dec. 3.—For the taking down and replacing a new ceiling in D ward of the Bromley Asylum, for the Managers of the Poplar and Stepney Sick Asylum District. Deposit £1 1s. Messrs. J. & W. Clarkson, architects, 136 High Street, Poplar, London, E.

LONDON.—Dec. 4.—For the erection of a laundry and disinfecting block at the borough isolation hospital, Muswell Hill, for the Hornsey Town Council. Mr. E. J. Lovegrove, borough engineer and surveyor, Municipal Offices, Highgate.

LONDON.—Dec. 10.—For supply and installation of three electric lifts and dismantling and removal of existing lifts at their Renfrew Road Workhouse, Lower Kennington Lane, S.E., and their infirmary, Brook Street, Kennington, S.E., for the Lambeth Board of Guardians. Deposit £2. Mr. J. L. Goldspink, clerk, Guardians' Offices, Brook Street, Kennington Road, S.E.

LONDON.—Dec. 10.—For supply of about eighty tons of steelwork for supporting platforms over engine traversers at Paddington Station, for the Great Western Railway Co. The Engineer, Paddington Station, London.

LONDON.—Dec. 12.—For alteration and extension of the receiving wards at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union. Deposit £2. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

LONDON.—Dec. 13.—For alterations and additions to the ladies' slipper baths at the public baths, Latimer Road, Wimbledon. Deposit £2 2s. The Borough Engineer and Surveyor, Town Hall, Wimbledon, S.W.

LUDDENDENFOOT.—Dec. 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with special subjects centre alterations at Luddendenfoot Council School—viz. builder, joiner,

plasterer, and painter. The Education Architect, County Hall, Wakefield.

MANCHESTER.—Dec. 7.—For erection of a Municipal school in Heald Place, Rusholme. Deposit £2 2s. The Education Offices, Deansgate, Manchester.

MANCHESTER.—Dec. 7.—For the supply of red terra-cotta for the new Heald Place Municipal school, Rusholme. Deposit £1 1s. The Education Offices, Deansgate, Manchester.

OVENDEN.—Dec. 6.—For the excavators', masons' and bricklayers', carpenters' and joiners', plumbers and glaziers', slaters', steel and cast iron, concreters', and patent glazing work required in the erection of a shed and basement at Ladyship Mills, Ovenden, Halifax. Messrs. J. F. Walsh, F.S.I., & G. Nicholas, F.R.I.B.A., architects and surveyors, 10 Harrison Road, Halifax.

OXFORD.—Dec. 10.—For the extension of the platform covering at Oxford Station, for the Great Western Railway Co. The Engineer at Paddington Station, London.

POOLE.—Dec. 3.—For erection of a kitchen and alterations to male imbecile ward at the workhouse, Longfleet. Mr. G. H. Seymour, architect and surveyor, Longfleet Road, Poole.

RAMSGATE.—Dec. 11.—For erection of an elementary school, consisting of boys', girls', and infants' departments, with cookery and manual instruction rooms, in Ellington Place, for the Corporation. Send in applications and £3 3s. deposit by Dec. 2 to Mr. G. G. Tucker, architect, 1 York Terrace, Ramsgate.

ROCHDALE.—For the builders' work of the Castleton Council School new infants' department. Send names to the Secretary, Education Committee, Rochdale.

ST. DAY.—Dec. 7.—For reseating the St. Day Wesleyan Methodist Church, Cornwall. Mr. S. Hill, architect, Green Lane, Redruth.

SCOTLAND.—Dec. 2.—For the mason, carpenter, plumber, plaster, and painter works of additions and alterations to factor's house and estate office at Old Cullen, and for mason, carpenter, and slater works of new salmon bothy to be erected at Portessie. Mr. J. Fowlie, Cullen House, Banff.

SCOTLAND.—Dec. 3.—For the several works required in connection with erection of a shelter in Maryhill Park, Glasgow, for the Corporation. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

SCOTLAND.—Dec. 7.—For alterations on property behind 340 High Street, Kirkcaldy, for the Town Council. The Burgh Surveyor's Office, Kirkcaldy.

SCOTLAND.—Dec. 16.—For the excavator, mason, and brick works, carpenter, joiner, ironmongery, and glazier works, slater work, plaster work, plumber and gasfitter works, and heating work of proposed hall and alterations on church at Strathmiglo, Fife, for the Trustees of the U.F. Church of Strathmiglo. The Manse, and Mr. George Craig, architect, 85 Duke Street, Leith.

SILVERTOWN.—Dec. 10.—For erection of fire brigade station and firemen's dwellings, for the West Ham Town Council. Deposit £1. Mr. J. G. Morley, borough engineer, Town Hall, West Ham, E.

SOWERBY BRIDGE.—Dec. 4.—For the following works, for the Local Education Committee—viz.: Heptonstall (Colden) Council School, repair of playground; Mytholmroyd (Scout Road) Council School, erection of bathroom in head teacher's house. Mr. F. J. Macdonald, Education Offices, Sowerby Bridge.

STIFFORD.—Dec. 9.—For erection of a porter's lodge at the hospital, Stifford, Essex, for the Orsett Joint Hospital Board. Mr. C. M. Shiner, A.R.I.B.A., architect, 7 Adam Street, Adelphi, London, W.C., and Grays.

THACKLEY.—Dec. 3.—For the several trades required in the erection of a Children's Home at Thackley. Deposit £1 1s. Mr. Fred Holland, architect, 22 Manor Row, Bradford.

TONBRIDGE.—Dec. 19.—For the erection of a Council School at Sussex Road, to accommodate 400 scholars, and other buildings. (Mr. W. H. Robinson, M.S.A., county education architect.) Send applications and £1 deposit by Dec. 4 to Mr. Fras. W. Cook, secretary of the Kent Education Committee, Caxton House, Westminster, S.W. (See advertisement.)

TRURO.—Dec. 14.—For erection and completion of first section of premises for the County Museum and Art Gallery. The Museum Buildings, Truro, or Mr. S. Hill, architect, Green Lane, Redruth.

WALES.—For erection of a new theatre at Swansea, for Messrs. H. C. Behenna & Co. Send names and £1 1s. deposit to Mr. W. B. Jones, architect and surveyor, Glantawe Chambers, Wind Street, Swansea.

WALES.—Dec. 3.—For the execution of structural alterations and additions to the Maesteg town hall and market buildings. Deposit £1 1s. The Architect and Surveyor to the Council, 32 Commercial Street, Maesteg.

WALES.—Dec. 4.—For erection of hall and cloakrooms, for the Trustees of the Tabernacle English Baptist Chapel, Skinner Street, Swansea. Deposit £2 2s. Messrs. W. Cousins & Son, 7 Brynmor Crescent, Swansea.

WALES.—Dec. 4.—For new roofing, cementing, repairing, &c., to existing house and outbuildings, Bodhenlli, Cerrigceinwin, for the Anglesey County Council. Mr. W. F. Brindle, architect, High Street, Llangefni.

WALES.—Dec. 7.—For erection of the Eisteddfod pavilion, to accommodate 14,000 people, in Bailey Park, Abergavenny, for the Eisteddfod Frenhinol Genedlaethol Cymru, y Fenni, 1913. Mr. B. J. Francis, architect, Linden House, Abergavenny.

WALES.—Dec. 14.—For the construction of offices and boundary wall at the gasworks at Aberavon, for the Corporation. Deposit £1 1s. Mr. J. Roderick, borough surveyor, Aberavon.

WALES.—Dec. 16.—For erection of twenty-three playsheds at various Council Schools, Aberdare, for the Education Committee. Mr. T. Botting, director, Education Offices, Aberdare.

WATFORD.—Dec. 20.—For erecting a vicarage for Christ Church, St. Albans Road. (Mr. H. A. Saul, A.R.I.B.A., 20 Gray's Inn Square, London.) Deposit £1 1s. Messrs. Northcroft, Neighbour & Nicholson, surveyors, 329 High Holborn, London, E.C.

WOLVERHAMPTON.—Dec. 3.—For erection of a horse repository at the cattle market, for the Markets Committee. Deposit £1 1s. Mr. G. Green, M.I.C.E., borough engineer, Town Hall, Wolverhampton.

TENDERS.

BRADWELL.

For erection of a Council School, for the Bucks. County Education Committee. Mr. C. H. RILEY, Education architect, Aylesbury.

Green	£5,200	0	0
Archer & Sons	5,172	0	0
Honour & Sons	5,075	0	0
Martin	5,007	0	0
Hawtin	4,656	0	0
Yirrell	4,646	0	0
Webster & Cannon	4,640	0	0
Acock & Co.	4,572	0	0
Cowley & Sons	4,531	4	5
G. H. GIBSON & Sons, High Wycombe			
(accepted)	4,502	0	0
Heap	4,496	13	8

CHELTENHAM.

For erection of domestic science centres, for the Education Committee. Messrs. CHATTERS & SMITHSON, architects, Cheltenham.

Gloucester Road.

Drew	£653	0	0
Dix	515	0	0
Billings & Sons	497	0	0
Skemp	486	0	0
Collins & Godfrey	485	0	0
CHANNON & SON, Cheltenham (accepted)	483	0	0

Naunton Park.

Dix	£507	0	0
Billings & Sons	502	0	0
Channon & Son	490	0	0
Collins & Godfrey	489	0	0
R. H. SKEMP, Cheltenham (accepted)	488	0	0

HOLMFIRTH.

For the various works required in the erection of a hippodrome in Eldon Yard. Mr. P. N. BROWN, architect, Holmfirth.

Accepted tenders.

Wagstaff & Turner, mason and bricklayer, Holmfirth.
David Rowell & Co., constructional steelwork, Westminster, S.W.

Bailey, Mettrick & Wakefield, carpenter and joiner, Holmfirth.

Ben Donkersley, plumber and glazier, Holmfirth.
Hinchliffe & Sons, painter and decorator, Holmfirth.
Albert Peaker, plasterer, Meltham.

LONDON.

For the supply and erection of internal fencing and oak boundary fencing and gates required in connection with the laying-out of Kilburn Grange, for the London County Council.

Internal Fencing.

Bayliss, Jones & Bayliss	£142	12	6
Palmer & Co.	134	5	0
Johnson Bros. & Co.	133	2	6
J. Elwell, Ltd.	124	5	0
HILL & SMITH, LTD., Brierley Hill Iron-works (recommended)	115	7	6

Oak Boundary Fencing and Gates.

Garden Crafts, Ltd.	£170	0	0
J. & S. Agate	80	0	0
J. Stenning & Son, Ltd.	79	0	0
W. Stenning & Son	75	0	0
Horton & Son	75	0	0
BOWEN, Halstead (recommended)	59	13	0

For cleaning the interior of Mina Road school, Walworth, for the London County Council.

W. F. Blay, Ltd.	£640	0	0
C. Wall, Ltd.	635	0	0
Rice & Son	629	0	0

GARRATT & SON, 83 Balham Hill (recommended)

515 0 0

For electric lighting installation at the L.C.C. Crossness pumping station.

Weston & Sons	£196	0	0
Dickinson & Co.	195	0	0
Lawrance & Sons	185	0	0
Hunt	171	11	6
Tackley & Co.	168	10	0
Tilley Bros.	147	0	0
PINCHING & WALTON, Cannon Street, E.C.			
(recommended)	139	8	6
Chief engineer's estimate	167	0	0

PORTSMOUTH.

For erection, completion and maintaining in repair for six months the following work, for the Corporation—viz.: A block of ferro-concrete (Hennebique) stores and offices on the Camber Quay. The BOROUGH ENGINEER, Portsmouth.

British Construction Co.	£13,980	0	0
Hardy & Co.	11,726	0	0
Bonham & Co.	10,430	0	0
Holbrough & Co.	10,012	0	0
Playfair & Toole	9,517	0	0
Wallis & Son	9,330	0	0
Bevis & Co.	9,313	0	0

WESTON-SUPER-MARE.

For the erection of the Regent Street picture theatre. Mr. W. H. WATKINS, F.R.I.B.A., architect, Bristol.

Pollard & Son	£7,490	0	0
Ridd & Sons	7,180	0	0
Cowlin & Sons	6,990	0	0
Addicott	6,850	0	0
Hayes & Sons	6,819	0	0
Wilkins & Sons	6,698	0	0

SOME NOTES ON THE USE, MISUSE, AND WASTE OF PUBLIC WATER SUPPLY.*

THE quantity and purity of water supplies have always been subjects of importance, and every year receive more and more attention. In urban centres and rural districts the desirability of a public supply of greater purity and larger quantity is generally found to be one of the most pressing questions. In the rural districts outbreaks of disease have now so frequently been traced directly to polluted wells that it can safely be said that at the present time the question of universal pure drinking water is one of primary importance to all classes of the community. The preservation of the quality as well as the quantity is, therefore, a serious responsibility upon the guardians of public water supplies.

Use.

In speaking of pure water, I hope we shall consider the question from a common-sense point of view, for when we

* A Paper read by Wm. Whitehouse, M.S.E. (Member), at a Western District meeting of the Institution of Municipal Engineers, held at Cinderford.

speak of "pure water" we mean "wholesome water." Sir Wm. Crookes has stated: "There is a great deal said about microbes, and a good deal of nonsense talked. When we hear that every glass of water we drink contains microbes by the thousand it is rather a shock. If we had too pure water, too much sterilised, we should all starve. A friend of his tried to bring his children up on hygienic principles, and had everything sterilised. The poor children were nearly starved, and at last they were given good, wholesome water with plenty of microbes in it, and they got as fat as possible."

Clark's tables give the average quantity of water required by an adult as follows:—

Two pints for drinking, in addition to about two pints retained in his food; three quarts for preparing and cooking his food; one gallon for cleansing dishes and food utensils; two gallons for house cleansing; three gallons for washing clothes; five gallons for cleansing the body; five gallons as a proportion, assuming a plunge bath is taken once a week; six gallons for w.c. use; total twenty-three gallons, being the average amount of water required daily for each individual.

Misuse and Waste.

I consider the theoretical quantity given above is too lavish, although it is much less than the Romans used in ancient times. Professor Rideal informs us that "ancient Rome, with its nine aqueducts, served its people with 300 gallons a day per head, including the supply for the public fountains, baths, circus, and amphitheatre, and for sanitary and trade purposes. A special State department administered the supply, and, as a result of these efforts, classic Rome was far more healthy than the modern city."

I think all will agree that this example could not be followed in these days, as there are very few waterworks that could stand that sort of thing.

It seems to me that a warning to the public is necessary to prevent waste or misuse of such an increasingly valuable commodity as pure water. The tendency of everyone who designs or manufactures water fittings and sanitary appliances is to rely upon an excessive supply of water, but they should be designed in such a way that the utmost efficiency and economy is obtained from moderate quantities, rather than by the waste of large quantities. An ordinary plunge bath holds from 30 to 70 gallons of water, and if everybody had a bath every morning, using, say, an average of 50 gallons each, there would be very few waterworks in the country that would be able to stand it. What is wanted is a greater use of the portable hip bath, with about three gallons of water, or some development of the shower bath by which a person could have a complete bath with a small expenditure of water, and so fulfil the ideal of the sanitarian, that every healthy person should have a head-to-foot bath once a day.

A very general idea prevails among water consumers that waste, although bad for the waterworks, is good for the drains and sewers, but that is not true because if the waste is due to defective fittings, it goes on in the daytime, plus the consumption, which in itself is, or ought to be, enough for all purposes. During the night, when the leakage is going on as before, and the consumption is small, the water is so distributed over a large area that it is of no use whatever as a flush to the drains and sewers, but is simply a waste of water which could be more effectively used in a legitimate manner.

There are various causes of the waste of public water. One is a misapprehension—as noted above—that a continual small stream of water along house drains improves the sanitary condition of the house. This is a mistake. A short sudden rush at intervals has a beneficial effect in flushing drains, but a continual dribble has none. There is no use, therefore, in allowing small streams of water to flow continually down water-closets, or other sanitary appliances. By improvements in the form of water-closets and of flushing apparatus, the former have been made quite self-cleansing with a flush of two gallons or even of less, appliances being insisted upon that make it impossible to give a greater flush.

However, it must be admitted that by far the greater part of the waste that takes place is due to carelessness on the part of the consumers of water, often carelessness that can only be considered as culpable, if it be borne in mind that wilful waste of water supplied by waterworks is simply stealing. The water is actually public property if the works belong to a corporation or council, as the case may be; and even if they belong to a company the water is public property in the sense that the price which each individual has

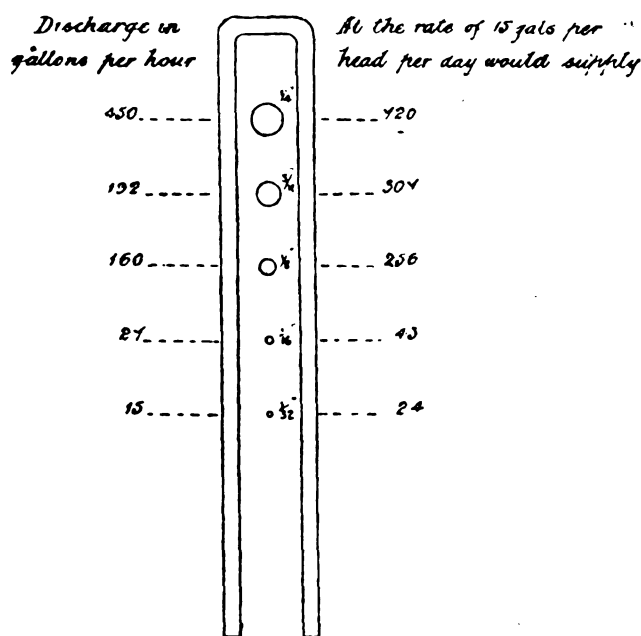
to pay to the company must in great part depend on the consumption of the whole, including waste.

Although not generally the case, many householders are indifferent to the waste of water; it is therefore a matter of indifference to them whether, for example, a tap is running the whole night or not. Where the cost of leathering a tap is charged to the consumer, there are some who consider that it is to their advantage to allow the leakage to continue. In the works under my control—although the average consumption is low—we lose every night, between the hours of 12 P.M. and 6 A.M., from 15,000 to 20,000 gallons of water. The major portion of this quantity must be waste.

Apart, however, from this, a great deal of leakage takes place, simply because it is difficult to appreciate how large a quantity is lost on account of an apparently very small leakage continuing through the whole twenty-four hours. It would astonish most people who see water merely dripping from a tap, or from a leaky pipe, to be told that the loss is likely to be 3 or 4 cubic feet in twenty-four hours, or fully the average consumption of water of one individual. Yet if a measuring glass be taken it will be found that from 2 oz. to 3 oz. per minute of water may fall merely in the form of drops, and this corresponds to a large consumption in twenty-four hours for one person. It needs but a very small dribble to discharge 20 cubic feet of water in twenty-four hours, or, say, the quantity that ought to be consumed by an average household.

This matter of the great quantity of water that may be lost by a continual leakage is well illustrated by Mr. W. Hope, C.E. The diagram below is taken from a paper of his on the subject of the waste of water, and is described in his own words.

The diagram shows a lead pipe drilled with various-sized holes, the burr on the inside not being removed. The actual number of gallons per day which passed through each hole under a pressure of 45 lb. per square inch is noted on the drawing, together with the corresponding number of persons that quantity would supply at the rate of 15 gallons a head per day.

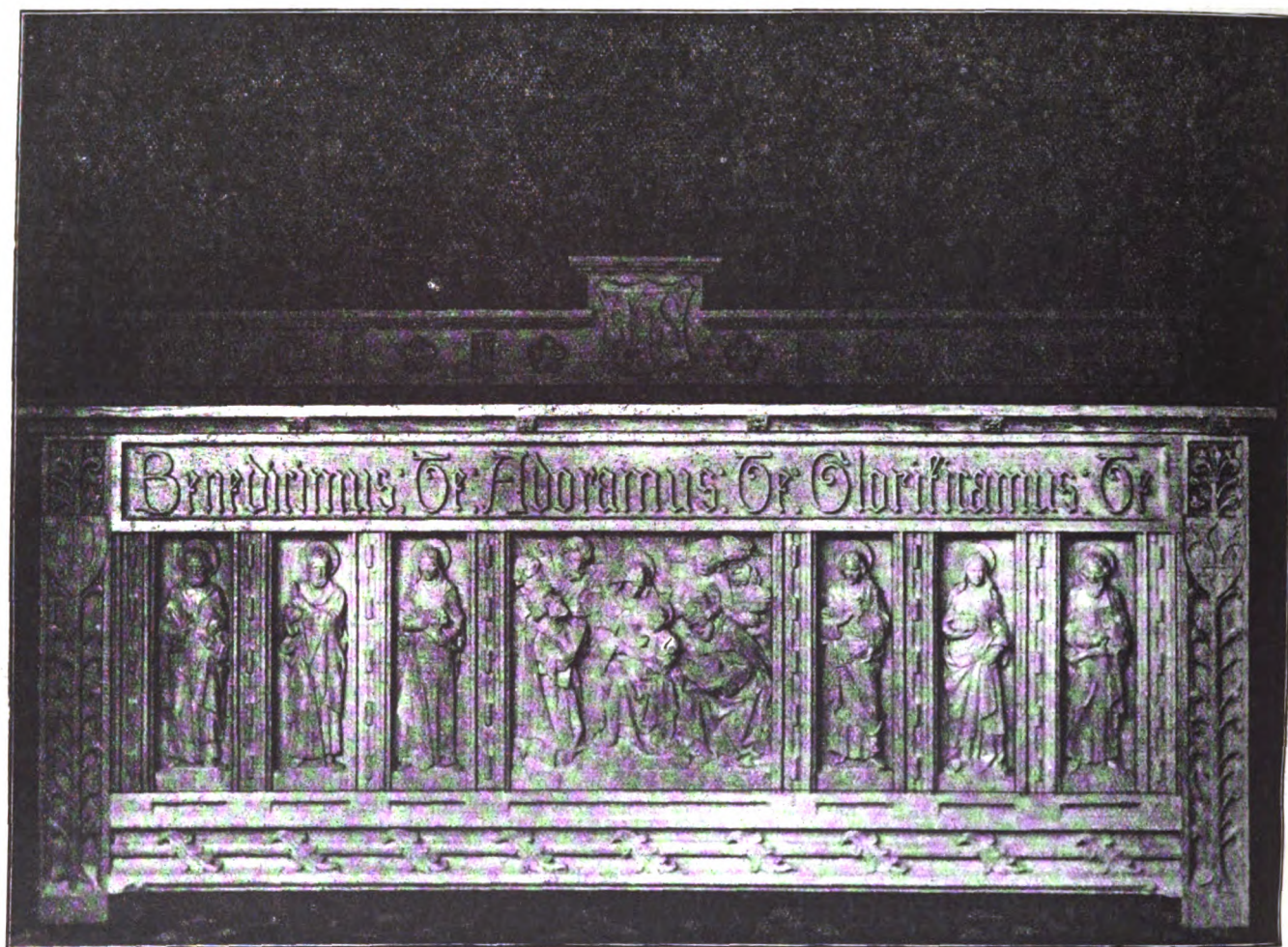


Results of experiments on the flow of water through circular holes in 1/2 in. lead pipe under a pressure of 45 lb. per square inch, showing number of persons who might be supplied by the discharge through flaws of various sizes.

Prevention of Misuse and Waste.

The question of waste prevention has always been a source of trouble, and one of anxious consideration for the engineer. Burton, in his treatise on water supplies, writes as follows:—

"Of late years large reductions in the consumption of water per head have been made by careful arrangements for saving waste. Waste has been saved in several ways; for example: (1) by the use of district meters; (2) by the use of house meters; and (3) by insistence on the use of house fittings of good quality only, and on their frequent inspection. I may say concerning the third item that the difficulty in preventing waste in waterworks has seldom been felt to any great extent in connection with the street mains, or the larger appliances belonging directly to the proprietors of the waterworks. These are fixed under the charge of skilled engineers, and are under their supervision afterwards. It thus occurs that leakage is not very likely to



THE memorial altar which we illustrate was given to the parish church of St. Mary, Humber, Herefordshire. It is of oak. The figure sculptures were the work of Mr. N. Hitch, of Vauxhall. The altar itself was made by Mr. H. Watson. The small brass let into the south side was the work of Messrs. Gawthorp, of Long Acre. The whole from the designs and under the personal supervision of Mr. E. Swinfen Harris, F.R.I.B.A., of London and Stony Stratford.

occur in them, and that if it does it is soon stopped. In the case of house fittings it is quite different. These are put in by the builder or the householder, who employs whomsoever he likes; it is not in the least to the advantage of the former of these to be sure that no water waste takes place, and it is to the reverse of the interest of the latter to prevent leakage, because he has nothing to pay for leakage, while he has to pay for preventing it. Very stringent regulations have been introduced in most English and many Continental towns for the prevention of waste in houses, and these have been put efficiently in force in a considerable number of cases."

Notwithstanding the severe climatic changes in England, few precautions are taken against the grave inconvenience of waste occasioned by frost. House pipes are often left unprotected, and so placed that a burst will cause considerable damage. Cisterns are frequently situated outside, and when they freeze solid are the cause of serious annoyance. The pipes and fittings in the ground should always be laid a good depth, and all exposed pipes and fittings should be protected with some non-conducting material.

I expect the Deacon waste-water meter is familiar to all of you; there is no doubt about its excellency in the discovery of waste, as one meter will control a large part of a district, but there are many authorities who would hesitate to instal this system in consequence of its cost and manipulation. It has even been suggested that every house should be supplied by meter just in the same way that it is supplied by gas. That is an exceedingly expensive way of controlling the supply on a large scale, and leads to the other extreme of undesirable parsimony in the use of water. To instal the meter system in my own district would cost £5,000, the cost of maintenance and inspection would necessarily be higher, which would mean raising the price of the water *pro rata*, as consumption was large or small, to cover the extra cost of maintenance.

There is one matter I should like to refer to, with which

I have no patience, and that is the parsimonious spirit of some public water authorities who begrudge the engineer in charge the assistance of inspectors and fitters for the proper, economical, and expeditious control of the works which he has to administer.

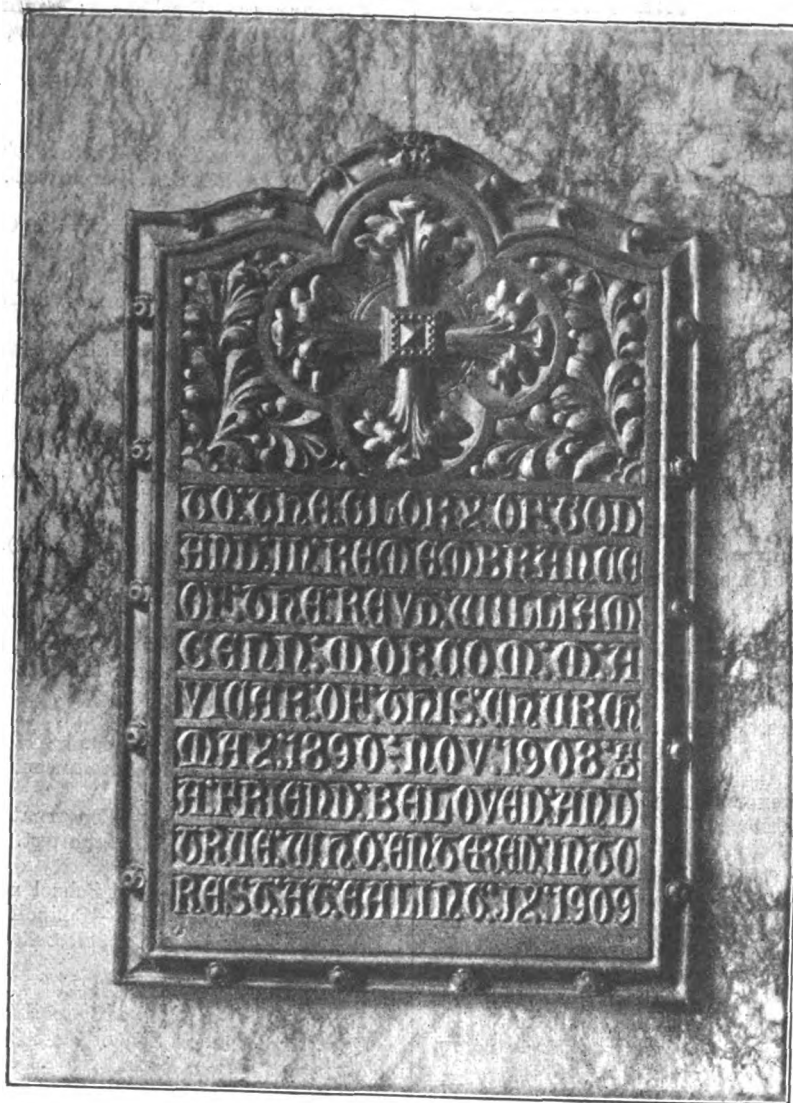
Quite recently a surveyor informed me that the waste of water in his district was so large as to be quite absurd. It has never been the custom of his authority to leather taps, but some time ago he made an inspection of his district, and with some assistance leathered, or saw to the leathering of, the taps himself. In one month, he tells me, he saved by these means no less than 400,000 gallons. Assuming it cost 6d. per 1,000 gallons to pump and distribute the water, the saving is quite equal to paying the wages of two men permanently employed, apart from the saving to the consumer's fittings, and also the saving of this precious and absolutely necessary fluid.

Speaking of the works under my own control, I am pleased to say that it has always been our custom to leather and repair consumers' service taps, &c., and to fix new taps free of charge (excepting the cost of the tap). The result has been highly economical and satisfactory, the average consumption, excepting periods of continued drought, does not exceed 12 gallons a head per day, including that used for trade purposes, and we supply a population of 10,000.

Previous to obtaining an additional supply, I am quite sure our system, comparatively speaking, was saved from absolute failure by our methods of checking waste.

Our methods have enabled us to keep in touch with, and to gain the confidence of, the consumers; the reporting of leakages is encouraged; and it has had the effect of making each and all of them an inspector, as it were. We are promptly apprised of leakages, and if they are not promptly attended to, of course, there is a row.

Notwithstanding the result, there are some, I am sorry to say, who disagree with our methods, but I sincerely hope



THE wall tablet, from the designs of Mr. W. G. B. Lewis, F.R.I.B.A., is to the memory of the vicar of St. Michael and All Angels Church, London Fields, and is fixed on the chancel pier over the seat which he occupied for eighteen and a half years. It was modelled by Messrs. T. & E. Nicholls, sculptors, of 28 Wincott Street, Kennington Road, S.E., and reproduced in electro-copper and gilt by the Kupron Co. The foliated cross in the quatrefoil and the seeds in the ornament on either side are of cast aluminium. The cost was subscribed by the friends of the late vicar. The church was built in 1864, Mr. Hakewell being the architect. Although a cheap church, the interior effect is very good and spacious.

that wise and experienced counsels will prevail. Under any circumstances, no one can dispute that our system means convenience, advantage, and even privilege to consumers, and it is undoubtedly a joint means of preventing waste.

It is only fair to state that plunge baths and water-closets are not in general use, but probably 40 per cent. of the consumers have one or the other, or both, so that our rate of consumption is certainly 40 per cent. below the theoretical quantity required per adult per diem.

Before concluding, I should like to summarise a few things which would certainly have the result of checking waste.

(1) *Night Inspection.*—This need only be periodical, but it would be the means of discovering underground leakages, as well as other causes of waste. The method to adopt would be for the inspector to proceed round the district during the night with a sounding rod, and to hand over the result of his discoveries to the fitters for further enquiry into the matter the next morning. This would have the effect of finding out wilful waste, as well as that due to defective fittings.

(2) First-class fittings of approved construction should be rigidly insisted upon, as well as the laying and fixing of pipes for protection against frost.

(3) The enforcement of 2-gallon closet flushing cisterns, and automatic flushing cisterns of stated capacity for urinals. Great economy in the use of water could be effected if it were possible to provide a satisfactory and water-saving substitute for the plunge bath.

(4) Outside closets could be an approved make of the waste-water type.

(5) Public inspection and repair of draw-off apparatus, such as leathering, &c., free of charge.

(6) Covered reservoirs for spring water to obviate the waste caused by the necessity of cleansing of algæ, or water weed, which rapidly forms in hot weather. (This advice may be somewhat superfluous, as spring water reservoirs are very rarely left uncovered nowadays.)

(7) Plenty of air valves and sluice valves to prevent the emptying of long lengths of main when repairing or tapping.

(8) Apparatus for tapping mains under pressure, and so save emptying them when doing this work.

(9) Pressure reducing valves in very hilly districts, wherever possible to fix them.

I should like to say, in conclusion, that one of the objects of this paper is to give food for thought among those who may be personally interested in this subject, whether publicly or privately—especially with regard to its importance. The question of preventing waste as far as possible, without curtailing the legitimate requirements, or causing inconvenience, annoyance, or undue expense to the consumer, would then, I think, be soon effected. Furthermore, as waterworks engineers, I am sure we all agree that the legitimate prevention of waste in our public water supplies is a serious duty, whether from a national or economical point of view.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BEDFORDSHIRE.

Leighton Buzzard.—Unionist Club House, High Street. Mr. T. H. Bishop, A.R.I.B.A., architect.

CHESHIRE.

Wilmslow.—R.C. Church (£4,000).

CORNWALL.

Newquay.—Police station: additions. Mr. A. E. Brookes (of Truro), County surveyor.

CUMBERLAND.

Cummersdale.—Boiler house and other works, for Messrs. Stead, McAlpin & Co., Print Works.

DEVON.

Alphington.—House. Mr. E. H. Harbottle (F.R.I.B.A.) & Son (of Exeter), architects.

Barnstaple.—House, Park Lane, Newport. Messrs. W. C. Oliver & Son, architects.

Devonport.—Church and schools, Keyham Barton. Mr. C. Cheverton, architect.

Newton Abbot.—Six houses, Fairfield. Messrs. F. J. Zealley, builders.

Prince Rock.—Almshouses. Mr. A. Wiblin (of Plymouth), architect.

DORSET.

Swanage.—"The Grosvenor": additions. Messrs. Parsons & Hayter, architects.

DURHAM.

Annfield Plain.—Twenty Council houses.

Brandon Colliery.—Twelve cottages for the Aged Workers' Homes Committee. Colliery engineer (of Brancepeth).

Byers Green.—Council School for 500 places. Mr. H. A. Curry (of Newcastle-upon-Tyne), architect.

Castletown.—Council School: alterations and improvements. Mr. N. Richley (of Durham), architect.

Cowshill.—Church (£3,000). Messrs. Clark & Moscrop, F.R.I.B.A. (of Darlington), architects.

Oakensham.—Council School for 500 places. Mr. W. Rushworth (of Durham), architect.

Spennymoor.—Picture Theatre, Weardale Street, for the Durham County Picture Hall Co.

ESSEX.

Brentwood.—Infants' Council school.

GLOUCESTERSHIRE.

Bristol.—Jam factory. Messrs. W. H. George & Sons (of Ashton-under-Lyne), architects.

HAMPSHIRE.

Gosport.—St. Luke's Church.

Lymington.—Cottage Hospital. Mr. Bernton-Benjamin, architect.

Portsmouth.—Ferro-concrete stores, Camber Docks.

HERTFORDSHIRE.

Buntingford.—Roman Catholic Church.

KENT.

Gravesend.—Workhouse additions. Mr. E. J. Bennett, A.R.I.B.A. (of London), architect.

LANCASHIRE.

Ashton-under-Lyne.—Elementary school, Waterloo.

Fleetwood, Horwich and Whitworth.—Elementary schools.

Heysham.—Shops and houses for the Lancaster Co-operative Society. Messrs. Austin (A.R.I.B.A.) & Paley (of Lancaster), architects.

Leigh.—Cinematograph Theatre, Railway Road. Messrs. J. C. Prestwich & Sons, architects.

Patricroft.—Church (for 600 sittings), Winton. Mr. R. T. Beckett (of Chester), architect.

Reddish.—Picture Palace (£2,500). Mr. Ogden (of Manchester), architect.

Rochdale.—Post Office (£12,000). Mr. C. P. Wilkinson (of H.M. Office of Works, London), architect.

Whitworth.—(See above.)

LEICESTERSHIRE.

Leicester.—Labour Exchange: alterations and extensions. H.M. Office of Works, London.

LINCOLNSHIRE.

Gainsborough.—King's Theatre: additions. Mr. Green, architect.

MONMOUTHSHIRE.

Abergavenny.—Workhouse: infirmary, laundry, &c. (£10,000). Mr. B. J. Francis, architect.

NORTHAMPTONSHIRE.

Northampton.—Council School for 1,200 children, St. James'.

NORTHUMBERLAND.

Newcastle-upon-Tyne.—Picture Theatre. Messrs. Hope & Tasker (A.R.I.B.A.), architects.

NOTTINGHAMSHIRE.

Arnold.—Headquarters for the County Territorial Force Association (£1,500).

Nottingham.—Drill Hall and Headquarters, &c., Cherry Holt Lane, for the County Territorial Force Association (£3,700).

Ruddington.—Village Hall (£1,200).

OXFORDSHIRE.

Oxford.—Chemical laboratories, South Park Road, for the University.

SOMERSET.

Bruton.—Public Library. Mr. A. J. Pictor, A.R.I.B.A., architect.

STAFFORDSHIRE.

Bucknall.—Relief Station (£750).

Lichfield.—Theatre for 800 sittings, Falmouth Street, for Mr. F. M. Barber. Messrs. Heath (of Manchester), builders.

Stoke-upon-Trent.—Fire Station, Welsh Street (£900).

Tamworth.—St. John's School: alterations and enlargement.

SURREY.

Haslemere.—"Hammercombe House," Hill Road: additions. Mr. H. Hutchinson, architect. Mr. A. E. Privett, contractor.

Kingston-on-Thames.—Congregational Church. Mr. E. Carter, A.R.I.B.A., architect.

SUSSEX.

Aldingbourne.—Council School additions (£550).

Crawley and Horsham.—Council Schools.

Lancing.—Infants' Council School (£1,500).

WORCESTERSHIRE.

Broadway.—Council School.

Bromsgrove.—Proposed Council School for 800 places.

Catshill.—Council School for 500 places.

Malvern Link.—Council School extension by ninety places (£700). Messrs. Pritchard & Pritchard (of Kidderminster), architects.

Redditch.—Cookery and Handicrafts Centre (£1,800).

Mr. A. V. Rowe, architect.

Rowley Regis.—Technical schools, Wright's Lane (£1,000).

YORKSHIRE.

Bingley.—Picture Theatre (£3,000). Messrs. J. B. Bailey & Son (of Keighley), architects.

Bridlington.—Bank, Manor Street. Mr. T. B. Whinney, F.R.I.B.A. (of London), architect.

Banking premises, King and Queen Streets: additions and alterations. Mr. J. Earnshaw, architect.

Business premises, Chapel and King Streets: re-building. Mr. T. B. Atkinson (of Hull), architect.

Cleckheaton.—Public Baths: additions and alterations.

Mr. C. Lund, Council surveyor.

Elland.—Cinematograph Theatre, Coronation Street, for the Central Pictures (Elland), Ltd.

Keighley.—Technical Institute extensions. Messrs. W. H. & A. Sugden, architects.

Kimberworth.—Congregational Church (£3,000).

Lepton.—Church Institute. Messrs. Cocking & Abbey (of Huddersfield), joint architects.

Rotherham.—Cinematograph Theatre (£3,000). Messrs. Chadwick & Watson (of Leeds), architects.

Scarborough.—Premises, St. Thomas Street. Mr. T. W. Whipp, A.R.I.B.A., architect.

Sheffield.—Presbyterian Mission Hall, Bath Street (£1,250).

WALES.

Aberystwyth.—Thirty workmen's dwellings, Trefechan.

Glyn Neath.—Council School.

Llandovery.—Garage for Mr. T. Roberts (of the Crown Stores).

Newtown.—Welsh National Memorial.

SCOTLAND.

Alloa.—Picture Palace for 500 sittings (£1,600), for F. Jacoveli and others.

Arbroath.—Sheriff Courthouse: alterations. Mr. P. C. Smith, Burgh surveyor.

SCOTLAND—continued.

Blairgowrie.—Church, Balmoral Road, Rattray (£2,500).
Mr. L. Falconer, architect.
Broughty Ferry.—Parish Church Hall.
Clydebank.—Six cottages, Cambridge Avenue, for Mr. J. Watson, of Glasgow
 "Trades Hotel": alterations for the Adelphi Stores Co., Ltd.
Dundee.—Glebeland School: re-construction.
 Home for Women, Paton's Lane (£1,000).
Giffnock.—Two double villas, off Church Road, for Mr. John Taylor.
Glasgow.—Twenty-eight terrace houses, Auldhouse and Lochlea Roads, Newlands, for Mr. John Baxter (of Kirkintilloch).
Grantown-on-Spey.—The "Palace" Hotel: additions.
Mr. R. B. Pratt, A.R.I.B.A. (of Elgin), architect.
Leith.—Five-storey warehouse, the Shore and Broad Wynd, for Messrs. R. & D. Slimon (of Shore).
Paisley.—No. 104 George Street and No. 54 High Street: additions for the Paisley Provident Co-operative Society, Ltd.
Pitlochry.—Cluniemore House: alterations. Separate trade contractors.

IRELAND.

Gibbstown.—Gibbstown House: re-building. Messrs. G. & T. Crampton (of Ballsbridge), contractors.
Athlone.—Courthouse (£3,000).

**PATENT SPECIFICATIONS PUBLISHED
 NOVEMBER 21, 1912.**

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

Nos. 23,692 and 23,695. Oct. 26, 1911.—H. F. Berry, 9 Victoria Street, S.W. Heating and drying stone and other materials for use on roads and like surfaces.

24,027. Oct. 30, 1911.—A. F. Berry, 27 Woodville Road, Ealing. Electrically heated cooking-ovens.

24,117. Oct. 31, 1911.—Date claimed under International Convention Nov. 1, 1910. Ludwig Schomburg, 53 Kaiserstr., Gelsenkirchen, Germany. Pipe joints.

24,000. Oct. 30, 1911.—H. F. Berry, 9 Victoria Street, S.W. Apparatus for heating and otherwise treating stone and like materials.

24,584. Nov. 6, 1911.—W. J. Hollick, Enderlie, Chatham Road, Old Trafford, Manchester. Electric light fittings.

24,656. Nov. 6, 1911.—H. R. O. Zeitz, c/o The Kieler Maschinenbau-Aktiengesellschaft, of Kiel, Germany. Machines for the manufacture of roof tiles or other similar articles.

25,513. Nov. 16, 1911.—J. A. Coombs, "Linslade," Old Road, Dukinfield, Chester, and S. Seaborne, Newton, Hyde, Chester. Apparatus for distributing sewage or like effluents on to filter beds.

26,112. Nov. 22, 1911.—O. D. Binger, 16 Wardour Street, W. Burglar alarm.

26,375. Nov. 25, 1911.—J. M. Leighton, 43 Broadway Court, Westminster, S.W. Pile drivers.

28,994. Dec. 23, 1911.—G. W. Hitchcox, Railway Approach, Well Hall Road, Eltham, Kent. T-square and guide for attachment to drawing boards.

29,228. Dec. 28, 1911.—J. Debize and A. Rigaud, 120 Boulevard Menilmontant, Paris. Safety lock for doors.

508. Jan. 6, 1912.—Messrs. Lippiett, 32 Park View, Tredegar, Mon. Apparatus for timber hauling, weight lifting, and the like.

1,054. Jan. 13, 1912.—H. M. Plucknett, 12 Bishopstoke Road, Eastleigh, Hants. Gas stoves.

1,279. Jan. 16, 1912.—The British Mathews, Ltd., and J. M. Pirrie, 147 Upper Thames Street, E.C. Gravity conveyors.

4,418. Feb. 22, 1912.—Peter Dick, 19 South Street, Andrew Street, Edinburgh. Making petrolised or air gas.

5,893. Oct. 26, 1911.—H. F. Berry, 9 Victoria Street, S.W. Heating and drying of stone and other materials for use on roads and like surfaces.

6,113. March 11, 1912.—E. C. Tonkin, 183A Peckham Park Road, S.E., and H. T. Collins, 3 Trafalgar Square, S.E. Taps for controlling the supply of fluids.

10,379. May 1, 1912.—E. Richards, 7 Cart Lane, Temple, Bristol, and F. M. & E. H. Burris, 40 Redcliffe Street, Bristol. Clips, straps, or holdfasts for pipes and the like.

12,217. May 23, 1912.—T. R. Von Oxinski, 18 Dabrowskiego, Lemberg, Austria. Marking out timber, stones, and the like.

TRADE NOTE.

Messrs. JOHN GRUNDY, LTD., heating and ventilating engineers, 393A City Road, E.C., some years ago supplied the heating apparatus to Christ Church Cathedral, Dublin. It is, therefore, with justifiable pride that they can point to the following letter received in June last from Mr. R. Caulfeild Orpen, F.R.I.A.I., A.R.H.A., the cathedral architect:—"I have pleasure in testifying to the satisfaction our heating apparatus continues to give to the cathedral authorities. The system has now been in use for many years since it was installed under the direction of the late Sir Thomas Drew." The Dean of Christ Church, in another testimonial, says the apparatus "warms the whole building equably, and does not cause any heaviness in the air."

THE Local Government Board have consented to the Finance and General Purposes Committee of the Lancashire Asylums Board borrowing £30,000 for the erection of villas at Lancaster Asylum for the accommodation of female private patients.

THE Architectural Association of Ireland held an ordinary meeting at 15 South Frederick Lane, Dublin, on Tuesday, November 19, the President, Mr. George L. O'Connor, F.R.I.A.I., in the chair. There was a large attendance of members. The following were elected members of the Association:—Messrs. W. Mortimer Paton, A.R.I.B.A., N. Langley Phillips, W. MacLaren, and W. H. O'Donnell. Members rejoined: Messrs. J. Howard Pentland, R.H.A., and S. Martin Ashlin, A.R.I.B.A. Dr. MacDowel Cosgrave, Hon. Secretary of the Georgian Society, read a paper on "Eighteenth-Century Architecture in Dublin." Mr. Caulfeild Orpen, R.H.A., proposed a vote of thanks to the lecturer, which was seconded by Mr. Lucius O'Callaghan.

THE Incorporated Church Building Society held its usual monthly meeting on November 21 at 7 Dean's Yard, Westminster Abbey, S.W. Grants of money were made in aid of the following objects, viz.: Building new churches at Walesby, All Saints, Lincs., £50; Yelverton, St. Paul, Devon, £100; Harrow-on-the-Hill, St. Peter, Middlesex, £200; and West Shore, Church of Our Saviour, Llandudno, £70. Rebuilding the churches at Gloucester, St. Catherine, £90; and Milton, St. James, Portsmouth, £160; and towards enlarging or otherwise improving the accommodation in the churches at Cavenham, St. Andrew, St. folk, £10; Christ Church (Forest of Dean), Glos., £10; Fir Tree, St. Mary-the-Virgin, county Durham, £40; Fitzroy Square, St. John the Evangelist, Middlesex, £40; Hambledon, St. Peter, Surrey, £10; Old Ford, St. Paul, Middlesex, £50; Othery, St. Michael, Somerset, £40; Radford, St. Nicholas, Coventry, £75; Redberth, Pems., £50; and Hendon, St. Paul, Sunderland, £30. Grants were also made from the Special Mission Buildings Fund towards building Mission churches at Bridgmary, Hants, £10, making in all £35; Cleo Hill, St. Peter, Salop, £20; East Studdal, Kent, £15; and West Humberstone, Leicester, £40. The following grants were also paid for works completed: Newfoundpool, St. Augustine, Leicester, £400, being balance of a grant of £1,000; Woolacombe, St. Sabinus, Devon, £80; Slade Green, St. Augustine, Kent, £20; Caerwent, St. Tathan, Mon., £40; Bethnal Green, St. Simon Zelotes, Middlesex, £10; Dinnington, St. Leonard, Yorks., £20; Woolwich, St. John, Kent, £50; Walton-on-the-Hill, St. Mary, Liverpool, £70; Charlestown, St. Thomas, Halifax, £20; Highgate, All Saints, Middlesex, £50; Grimsby, St. Augustine, £150; Welton, St. Mary, Lincoln, £20; Eastrop, St. Mary, Hants, £40; Sneynton, St. Stephen, Notts, £100; Cardiff, St. Stephen, £200; Pontyates, St. Mary, Carms., £75; Luckington, St. Mary and St. Ethelbert, Wilts, £20; East Hanney, St. James-the-less, Berks., £10; Newtown, near Salisbury, £50; Two Mile Hill, St. Alban, Bristol, £30; Silfield, St. Helen, Wymondham, Norfolk, £20; Pontygwyddel, St. John-the-Baptist, N. Wales, £10; Trebanos, SS. Michael and All Angels, Glam., £40; and Westcliff-on-Sea, SS. Michael and All Angels, Essex, £50. In addition to this, the sum of £790 was paid towards the repairs of thirty-two churches from Trust Funds held by the Society, and sums of money were accepted as Repair Funds for the churches at Edenbridge, St. Peter and St. Paul, Kent, and Kensal Town, St. Thomas, Middlesex.

LONDON MASTER BUILDERS' ASSOCIATION.

A MONTHLY meeting of the Council was held on Thursday, November 21, at Koh-i-Noor House, Kingsway, W.C., the chair being occupied by Mr. James S. Holliday, President.

The Law and Parliamentary Committee's Report on legal cases and matters connected with the National Insurance Act was received and adopted.

The Report of the Conciliation Board was read and approved.

Correspondence relating to trade matters was considered.

Mr. H. C. Horswill, Forest Gate, was elected an ordinary member, and Mr. A. George's nomination as an Associate member was accepted.

COMPETITION NEWS.

CANADA.—With reference to the competition of plans for a Town Hall at Winnipeg, to be erected at an estimated cost of \$3,000,000 (about £616,600), the Imperial Trade Correspondent at that place (Mr. J. Appleton) now reports that the regulations as published limit the competition to British subjects resident in Canada.

WELLINGTON.—The Urban District Council are about to promote a competition in order to obtain designs for fifteen additional workmen's dwellings to be let at a weekly rental of from 3s. to 3s. 6d. each. A premium of £10 10s. will be offered.

NEW CATALOGUES.

It is not often we meet with a trade list which is so really instructive as the illustrated catalogue recently brought out by Messrs. Doulton & Co., Ltd., in connection with their drainage and building materials. As far back as the London Exhibition of 1851 this firm received a first class medal for stoneware; since then they have been accumulating honours with almost mechanical regularity, until they have now received over 250 gold medals, diplomas, and other awards at important exhibitions in all the four Continents. The name of Doulton stands high all over the world as the universal providers for sanitary science. The new catalogue comprises the following sections: Stoneware pipes and fittings for drainage and sewerage; manhole channels; sewer-gas interceptors, gullies and grease interceptors; cast-iron manhole covers; chimney tops, cattle troughs, and building sundries. But, as we have already hinted, Messrs. Doulton send out something more than a price-list, for the pages contain a considerable amount of sanitary information which is lucidly illustrated. Special attention is directed to the opening section, No. 19, describing joints for stoneware pipes—particularly Doulton's "Grouted Composite Joint," which, as most of our readers are doubtless aware, combines two distinct joints—an inner seal formed by two bands of composition and an outer seal of Portland cement grout. Another important section is No. 22, showing the most modern designs of interceptors—for, despite the recent Report by the Departmental Committee, intercepting traps are likely to remain long in favour. The longest section is No. 23, which is devoted to yard gullies, grease interceptors, &c. To architects the hygiene of building must always be a most important aspect of their work, and while that is so the profession will always look with confidence to Messrs. Doulton for the highest-class workmanship and the latest improvements.

Mr. John Thorp, 98 Gray's Inn Road, W.C., has been making models for over thirty years, and it is only natural that he should be enthusiastic about them. But in his recent catalogue he makes no extravagant claims on their behalf. The numerous illustrations show the great diversity of work he has executed. A $\frac{1}{8}$ -inch scale model of a house, a $\frac{1}{2}$ -inch scale model of a water tower, an inch scale section of an electric-light station, a 1-200 scale model of hospital buildings, and picturesque models of Old London are some of the many illustrated. It is interesting to know as to cost that, roughly, a $\frac{1}{2}$ per cent. basis may be worked on for villas and small private houses, while for larger buildings the percentage comes lower.

The latest catalogue we have received from the Carron Company is devoted to rain water, soil goods, and sanitary castings. This Company are able to meet any demands in this class of goods, which can be had fine cast, galvanised, enamelled, or coated with Dr. Angus Smith's solution. There is no need to talk about the high character of all the Carron products, as they have talked for themselves during the past century and a half. The catalogue is well produced, and, with its limp covers, does not encroach on over-much space.

A handy catalogue issued by the Electric and Ordnance Accessories Co., Ltd., Aston, Birmingham, is entitled "Modern Heating by Electricity." It deals with their "Eclipse" convectors and radiators. The makers give a guarantee of five years to replace free of charge any convector heating elements which may fail prematurely through faulty material or workmanship. The same guarantee applies to the "Eclipse" combined convectors and radiators which unite the essential features of both methods of heating. The designs for the three types of "Eclipse" heaters are in many cases of a most pleasing kind.

"Down-Draught and its Cure" is the title of an excellent booklet by means of which Messrs. J. H. Sankey & Son, Ltd., Essex Wharf, Canning Town, E., explain and illustrate the virtues of their "Down-Draught" Preventing Pot. The pot's most obvious merit is an entire absence of all movable or metal parts. It is made of selected clays (in red, buff, and salt glazed), and is in one piece. Its upper part is so shaped as to consist of three storeys of louvres, down the steeply-sloping sides of which the down-draught rushes and becomes dispersed before reaching the body of the pot. If the wind is blowing across the pot it rushes up the louvres, and carries the ascending smoke with it. In other words, this pot both increases up-draught and prevents down-draught. In exceptionally difficult cases it may be necessary to close the top of the pot with a cap, which discharges the smoke solely through side-openings. The pots are sold in three heights—namely, 30 inches, 42 inches, and 48 inches, and with bases of 12 inches and 14 inches. In appearance they make a grand improvement on the many incredibly ugly expedients which destroy aesthetically the skyline of many an excellent building.

In the ceramic world the firm of Messrs. Keeling & Walker, of Stoke-on-Trent, looms large. We understand that the Keeling family have been connected with the potting industry since 1770. But apparently this fact is no bar to up-to-dateness in their business. They have just issued a handsome new catalogue, No. 12, which seems to include the latest and best of everything in the way of raw materials, colours, glazes, chemicals, sundry utensils, and machinery for the ceramic industry. Quality has been the first consideration. The various sections are prefaced by clearly written notes, which contain many valuable suggestions and information as to what to do and what not to do.

VARIETIES.

THE Local Government Board has sanctioned the £9,000 loan for the Wirksworth sewerage scheme.

THE Right Hon. Earl Fortescue, Lord Lieutenant of the County of Devonshire, has consented to accept the office of President of the twenty-eighth Congress of the Royal Sanitary Institute, to be held at Exeter from July 7 to 12, 1913.

MESSRS. SAVILLE & MARTIN, architects, Dacre House, Arundel Street, W., have prepared the plans for a cinematograph hall proposed to be erected on Nos. 593-597 Old Kent Road.

AN exhibition of materials, appliances, and machinery used for the construction, maintenance, and improvement of roads will be held at the Royal Horticultural Hall, Vincent Square, Victoria Street, London, S.W., in connection with the International Road Congress to be held in London in June 1913. It will be opened on Monday, June 23, and closed on June 28.

AN event of some interest in the architectural world is the translation into the Russian language of Banister Fletcher's "History of Architecture on the Comparative Method," published by B. T. Batsford, 94 High Holborn, W.C. This undertaking has been successfully accomplished after several years' labour by M. Robert Böker, of St. Petersburg, who is a member of the Imperial Society of Russian Architects. M. Böker, like many Russians, talks English fluently, and has been able to effect an exact translation without deteriorating from the value of the original work.

THE Science Standing Committee of the Royal Institute invite members of the R.I.B.A. and others interested to forward particulars of instances of defective roofing-tiles which have come to their notice. It is desirable where possible that such particulars should be accompanied with samples of such defective tiles, with any remarks upon the nature of the defects and their cause, also giving information as to the make of the tile, i.e. hand-made or otherwise, with its place of origin, and any remarks upon the nature of the material from which the tiles were made.

THE Architect and Contract Reporter.

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EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

•• As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

JAMAICA.—Jan. 31.—The Mayor and Council of Kingston offer a prize of £100 for a design for municipal buildings (suitable for construction in reinforced concrete) to cost not more than £9,000. Charge 2s. For information apply to Messrs. Alexander Young (London), Ltd., 60 Fenchurch Street, London, E.C.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

CONTRACTS OPEN.

ABERSYCHAN.—Dec. 16.—For erection of a higher elementary school to accommodate 250 scholars at Abersychan, Mon., for the Monmouthshire Education Committee. Deposit £2 2s. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport.

(Continued on page 7.)

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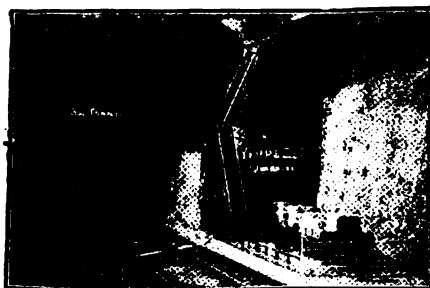
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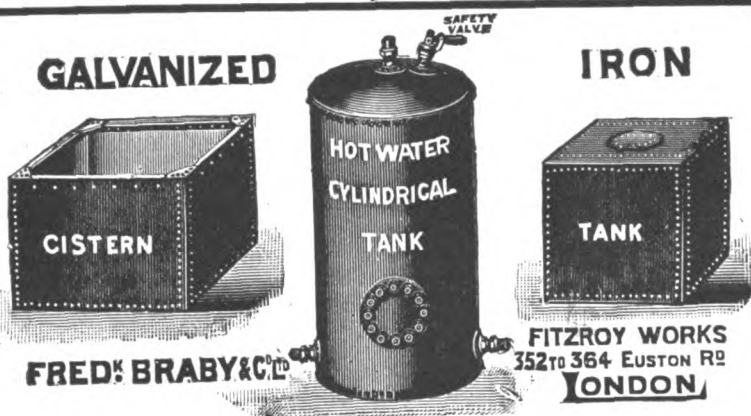
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ABERTILLERY.—Dec. 16.—For a small extension to the generating station of the Urban District Council. Deposit £1 1s. Mr. H. E. Mitchell, A.M.I.C.E., M.I.E.E., 5 Victoria Street, Westminster, S.W.

ASHTON-UPON-MERSEY.—Dec. 10.—For erection of a shelter and conveniences, and also for erection of a bowl house in the recreation ground, Grosvenor Road. Deposit £1 1s. Mr. F. Hutton, surveyor, Council Offices, Ashton-upon-Mersey.

BANBURY.—For erection of a quadrangle of nine cottages on the High Town Road estate, for the Committee of the Banbury Co-operative Society, Ltd. Deposit £1 1s. Mr. F. J. Cooke, architect, High Street, Banbury.

BURNLEY.—The War Department invite tenders for the demolition of the administrative block at the hospital, the barracks, Burnley, and removal of all materials arising therefrom, including making good coping to external walls of barracks. The Commanding Royal Engineer, Royal Engineer Office, 14 Elliot Street, Liverpool.

CASTLEFORD.—For dwelling-house, sheds, &c., Pretoria Street. Mr. F. Scatchard, architect and surveyor, Bank Street, Castleford.

CROSBY (Lincs.).—Dec. 16.—For the works in erection of a Masonic Hall. Mr. A. M. Cobban, architect and surveyor, Home Street, Scunthorpe.

DENTON (Lancs.).—Dec. 17.—For alterations to existing tanks, construction of new sludge tanks, and erection of engine and sludge pressing house, and other works in connection therewith, for the Urban District Council. Deposit £3 3s. Mr. J. B. Cooke, engineer, Town Hall, Denton, near Manchester.

DEWSBURY.—Dec. 12.—For masons', joiners', and plasterers' work (to be let in one contract) required in extension of dining-room at the workhouse, for the Guardians. Messrs. Hanstock & Son, architects, Batley.

DOVER.—Dec. 14.—For additions and alterations to the girls' department of St. Martin's Council School at Markland Road, for the Town Council. Deposit £2 2s. Mr. W. C. Hawke, A.M.I.C.E., borough engineer, Maison Dieu House, Biggin Street, Dover.

EASINGTON.—Dec. 10.—For erection of station buildings and warehouse at Easington, between Hartlepool and Sunderland, for the North Eastern Railway Co. Mr. W. Bell, the company's architect, Westgate Road, Newcastle-on-Tyne, and the Stationmaster's Office, Sunderland.

EXETER.—Dec. 23.—For the extension of the isolation hospital, Whipton, near Exeter, for the Corporation. Deposit £1 1s. Mr. T. Moulding, M.I.C.E., city engineer and surveyor, 7 Southernhay West, Exeter.

FELIXSTOWE.—Dec. 16.—For the enlargement of the public convenience in Sea Road, near Station Road, for the Felixstowe and Walton Urban District Council. Deposit 10s. Mr. H. Clegg, A.M.I.C.E., surveyor, Town Hall, Felixstowe.

GLASGOW.—Dec. 18.—For the following works of proposed additional storey at the Royal Infirmary—viz.: (1) mason and brick; (2) carpenter, joiner, glazier, and ironmonger; (3) slater; (4) plumber; (5) plaster; and (6) tile. Deposit 10s. 6d. for each schedule. Mr. Millar, A.R.S.A., architect, 15 Blythswood Square, Glasgow, and Mr. P. Rintoul, secretary, 212 West George Street, Glasgow.

GLASS HOUGHTON.—For the following works at Glass Houghton, near Castleford—viz.: (Contract No. 1) branch stores warehouse, &c.; (2) seven dwelling-houses in Ashton Road; and (3) seven dwelling-houses off Ashton Road—for the Castleford Industrial Society, Ltd. Messrs. Garside & Pennington, architects, surveyors, &c., Pontefract and Castleford.

HEMSWORTH.—Dec. 18.—For the various works required in erection of buildings at the workhouse, for the Guardians of Hemsworth Union. Send in names at once to Mr. T. H. Richardson, architect, Hemsworth, near Wakefield.

HERSHAM.—Dec. 21.—For carrying out the building of drill hall premises for the Territorial Force Association of the County of Surrey. Messrs. Jarvis & Richards, architects to the Association, 10 Queen Anne's Gate, Westminster, S.W. Send £1 1s. deposit by December 13 to Messrs. Robinson & Roods, quantity surveyors, 37 Bedford Row, W.C.

HEREFORD.—Dec. 10.—For erection of a grain shed, offices, &c., for the Great Western Railway Co. The Engineer at Gloucester Station.

IRELAND.—Dec. 12.—For building twenty-two single and eighteen double cottages for labourers, and fencing fifty-eight plots, for the Dungannon Rural District Council. Charge 5s. The Clerk to the Rural District Council, Dungannon.

IRELAND.—Dec. 17.—For erection and furnishing of National School Buildings at Kilcoosey, county Leitrim. The Office of Public Works, Dublin, and the Royal Irish Constabulary, Dromahair.

IRELAND.—Dec. 17.—For the erection and completion of sanatorium, comprising main and secondary blocks, medical superintendent's house, laundry and engine house, &c., at Ryehill, near Athenry, co. Galway, and for a dispensary in the town of Galway, for the Sanatorium Committee of the Galway County Council. Deposit £2 2s. Mr. W. A. Scott, A.R.H.A., A.R.I.B.A., architect, 45 Mountjoy Square, Dublin.

IRELAND.—Dec. 20.—For the erection and furnishing of National school buildings at Milltownpass, county Westmeath. The Office of Public Works, Dublin, and the Royal Irish Constabulary Barracks, Rochfort Bridge.

KEIGHLEY.—Dec. 10.—For erection of a foundry and engineering plant in Woodhouse Road. Messrs. Moore & Crabtree, architects, York Chambers, Keighley.

KNOTTINGLEY.—For erection of villa, Womersley Road. Mr. F. Scatchard, architect and surveyor, Bank Street, Castleford.

LEEDS.—Dec. 11.—For the whole of the trades required in connection with alterations to Park Lane Council School. The Education Department (Architect's Section), Calverley Street, Leeds.

LEEDS.—Dec. 16.—For the bricklayer's, carpenter's, plasterer's, and concretor's, roof tiles, heating engineer's, painter's, and plumber's work required in connection with erection and completion of a sanatorium (20 beds) at the workhouse, Beckett Street. Send applications by December 9 to Messrs. J. Harper Bakes & Son, architects, Calverley Chambers, Victoria Square, Leeds.

LEEDS.—Dec. 17.—For the bricklayers' and masons', carpenters' and joiners', plumbers', plasterers', slaters', painters', and ironfounders' work required in erection of sanitary blocks to sections 6 at the infirmary, and alterations to block 2 at the workhouse, Beckett Street. Send applications by Dec. 9 to Mr. G. F. Bowman, architect, 5 Greek Street, Leeds.

LONDON.—Dec. 10.—For supply of about eighty tons of steelwork for supporting platforms over engine traversers at Paddington Station, for the Great Western Railway Co. The Engineer, Paddington Station, London.

LONDON.—Dec. 12.—For alteration and extension of the receiving wards at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union. Deposit £2. Mr. F. W. Piper, clerk, Union Offices, St. John's Hill, Wandsworth, S.W.

LONDON.—Dec. 13.—For alterations and additions to the ladies' slipper baths at the public baths, Latimer Road, Wimbledon. Deposit £2 2s. The Borough Engineer and Surveyor, Town Hall, Wimbledon, S.W.

LOUGHBOROUGH.—Dec. 10.—For additions to the Wesleyan Methodist Sunday School, Leicester Road. Messrs. Barrowcliffe & Allcock, architects, Town Hall Chambers, Loughborough, Leicestershire.

MANCHESTER.—Dec. 13.—For execution of sanitary alterations in connection with the following premises, for the Corporation—viz.: 1 to 9 Boden Place, 1 to 7 Boden Street, Ardwick; 29 and 31 Paddock Street, Ardwick; 2 to 16 Heron Street, 4 Heron Place, and 5 Erskine Street, Hulme; 21 to 33 Richardson Street and 55 and 57 Teignmouth Street, Collyhurst. The Manager of the Drainage Department, Town Hall, Manchester.

MARGATE.—For erection of wood partitions to provide cubicles for nurses at their convalescent home, Northumberland Road, for the Guardians of West Ham Union. Mr. T. Smith, clerk, Union Road, Leytonstone, N.E.

MORLEY.—Dec. 11.—For the masons' and bricklayers', joiners', plumbers', plasterers' and concretors', slaters' and ironfounders' works required in the erection of additional premises, Britannia Mills, Morley, for Messrs. William Baines & Sons, Ltd. Mr. T. A. Buttery, Lic.R.I.B.A., architect, Queen Street, Morley, and 1 Basinghall Square, Leeds.

NEWPORT (Mon.).—Dec. 9.—For the construction of an underground convenience in Austin Friars, for the Corporation. The Borough Engineer, Town Hall.

OXFORD.—Dec. 10.—For the extension of the platform covering at Oxford Station, for the Great Western Railway Co. The Engineer at Paddington Station, London.

PAYHEMBURY.—Dec. 17.—For reconstructing the Vicarage House and erecting new farm buildings for the Rev. H. L. Parry. Deposit £3. Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

SCOTLAND.—Dec. 16.—For the excavator, mason, and brick works, carpenter, joiner, ironmongery, and glazier works, slater work, plaster work, plumber and gasfitter works, and heating work of proposed hall and alterations on church at Strathmiglo, Fife, for the Trustees of the U.F. Church of Strathmiglo. The Manse, and Mr. George Craig, architect, 85 Duke Street, Leith.

SCOTLAND.—Jan. 6.—For the works to be executed in the construction of new station buildings and relative works at Port Glasgow, for the Caledonian Railway Co. Deposit £22 2s. The Engineer, Buchanan Street Station, Glasgow.

SHEFFIELD.—Dec. 9.—For works required to be done in connection with the following, for the Education Committee—viz.: (1) Tinsley Council school, Plumpers Road (alterations and extensions); (2) Tinsley temporary school, Shepcote Lane (work in foundations, &c.). The City Architect, Town Hall, Sheffield.

SILVERTOWN.—Dec. 10.—For erection of fire brigade station and firemen's dwellings, for the West Ham Town Council. Deposit £1. Mr. J. G. Morley, borough engineer, Town Hall, West Ham, E.

SMARDEN.—Dec. 13.—For erection of a cloakroom and offices of the Smarden Council school, for the Kent Education Committee. (Mr. W. H. Robinson, committee's architect, Caxton House, Westminster, S.W.) Mr. W. J. Spicer, correspondent, 19 Bank Street, Ashford, Kent, or at the office of the Committee, Caxton House, Westminster, S.W.

SOUTH BERSTED.—Dec. 9.—For proposed alterations and additions to the school buildings, for the Managers of the South Bersted Church schools. Mr. W. T. Barlow, A.R.I.B.A., Arcade Chambers, Bognor.

SOUTH KIRKBY.—For the erection and completion of eighteen (six-roomed) dwelling-houses in Mill Lane, South Kirkby, near Wakefield, for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Messrs. Garside & Pennington, architects, surveyors, &c., Ropergate, Pontefract, and Central Chambers, Castleford.

STOCKPORT.—Dec. 16.—For erection of extensions to the technical school, Education Committee. Send applications and £2 2s. deposit by Dec. 16 to Mr. A. Lawton, Secretary to Education Committee, Town Hall, Stockport.

TARPORLEY.—Dec. 9.—For alterations and additions at Tarporley (British) Council school. Deposit £1. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester.

TAUNTON.—Dec. 16.—For the erection of twelve houses in String Lane and appurtenant work in connection therewith. Deposit £1 1s. Mr. D. Edwards, A.M.Inst.C.E., borough surveyor, Municipal Buildings, Taunton.

TRURO.—Dec. 14.—For erection and completion of first section of premises for the County Museum and Art Gallery. The Museum Buildings, Truro, or Mr. S. Hill, architect, Green Lane, Redruth.

UPPERMILL.—Dec. 12.—For various works required in erection of a picture hall at Uppermill, Saddleworth. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge.

WALES.—Dec. 10.—For rebuilding the Temple of Fashion, Aberavon. Mr. F. B. Smith, architect and surveyor, St. Oswald's Chambers, Port Talbot.

WALES.—Dec. 14.—For the construction of offices and boundary wall at the gasworks at Aberavon, for the Corporation. Deposit £1 1s. Mr. J. Roderick, borough surveyor, Aberavon.

WALES.—Dec. 16.—For erection of twenty-three playsheds at various Council Schools, Aberdare, for the Education Committee. Mr. T. Botting, director, Education Offices, Aberdare.

WALES.—Dec. 17.—For erection of laboratories and classrooms at Llandovery College. Mr. Ll. Bankes Price, architect, Doldreant, Lampeter, or at Llandovery College.

WALES.—Dec. 17.—For a pair of iron entrance gates for the approach to the Cardiff and Barry Industrial School, Dinas Powis. Tender forms and specifications of work may be obtained from Mr. J. J. Jackson, secretary, Education Offices, City Hall, Cardiff.

WALES.—Jan. 9.—The Swansea Harbour Trustees invite tenders for the supply, delivery, and erection of: (1) One framed and braced steel double-storeyed extension of the grain shed at the Prince of Wales Dock, with sides and roof covered with galvanised corrugated sheeting; the extension to be 70 feet long by 63 feet wide. (2) Two framed and braced steel single-storeyed extensions of the transit shed at

No. 1 Quay, King's Dock, with sides and roofs covered with galvanised corrugated sheeting; the extensions to be 122 feet long by 60 feet wide and 96 feet long by 60 feet wide respectively. Deposit £3 3s. Mr. Talfourd Strick, clerk, Harbour Offices, Swansea.

WARMINSTER.—Dec. 12.—For alterations and additions to 54, 55, and 56 Market Place. Mr. A. F. Long, architect, 53 Market Place, Warminster.

WATFORD.—Dec. 20.—For erecting a vicarage for Christ Church, St. Albans Road. (Mr. H. A. Saul, A.R.I.B.A., 20 Gray's Inn Square, London.) Deposit £1 1s. Messrs. Northcroft, Neighbour & Nicholson, surveyors, 329 High Holborn, London, E.C.

WHEATLEY HILL.—Dec. 10.—For alterations and improvements at Wheatley Hill Council school. Mr. N. Richley, Shire Hall, Durham.

WINTERBORNE ZELSTON.—Dec. 16.—For additional buildings and repairs on the small holdings of Winterborne Zelston Farm, near Blandford, for the Dorset County Council. The County Land Agent, County Offices, Dorchester, or Mr. Leonard Young, the Old Rectory House, Winterborne Zelston.

TENDERS.

BIRMINGHAM.

For the erection of stabling, foreman's house, loose-boxes, smithy, &c., at the destructor works, Lifford Lane, King's Norton. Mr. W. E. BALLARD, A.M.I.C.E., engineer, Sparkhill.

ELVINS & SONS, Soho Hill (accepted) . . . £3,458 0 0
For the erection of stabling, &c., at the, destructor works, Nechills.

J. E. HARPER, Lombard Street (accepted) . £1,711 0 0

CHELMSFORD.

For erection of an engine house at the waterworks, Mildmay Yard, for the Town Council. The BOROUGH ENGINEER, Chelmsford.

Hammond & Son	£1,149 0 0
Elgin & Co.	991 0 0
Johnson & Hawkes	978 0 0
Weight	940 0 0
Potter	935 0 0
French	933 14 6
T. J. BAILEY, Chelmsford (accepted)	914 10 0

EASTBOURNE.

For the erection of the P.M. Church, Whitley Road. Messrs. GEORGE BAINES & SON, architects, 5 Clement's Inn, W.C.

Allcock	£5,076 3 0
Hookham	4,568 0 0
Bodle	4,430 10 6
Martin & Sons	4,344 0 0
Bainbridge & Son	4,267 0 0
F. & H. F. Higgs	4,200 0 0
Jerram	4,165 0 0
Goddard & Sons	4,154 0 0
Smith & Sons, Ltd.	4,100 0 0
Battley, Sons & Holness	4,094 0 0
Norman & Burt	4,046 0 0
Miller & Selmes	3,992 0 0
Longley & Co.	3,978 0 0
Dorey & Co.	3,900 0 0
Johnson & Co., Ltd.	3,789 0 0
Pearless, Dennis & Co.*	3,622 0 0

* Accepted with modifications in omitting tower, &c., making the total amount £2,750.

EVESHAM.

For erection of drill hall and instructor's house, with accompanying officers' rooms, armoury, and lecture rooms, &c., in Coronation Road, for the Worcestershire Territorial Association. Messrs. DICKS & WALDRON, architects, Evesham.

Wells & Sutton	£2,317 0 0
Broad, Ltd.	2,300 0 0
Espley & Co.	2,120 0 0
Cliff & Co.	2,060 0 0
Tilt Bros.	1,999 0 0
Collins & Godfrey	1,999 0 0
Spicer	1,985 0 0
White	1,965 0 0
Dorse	1,925 0 0
R. ROBERTS, Worcester (provisionally accepted)	1,836 0 0

EGREMONT.

For the construction of new water-supply works.

WABING & SONS, Huddersfield (*accepted*) £22,307 13 6**HARROGATE.**

For the separate trades required in erection of a glass and iron annexe at the Royal Pump Room. Mr. C. E.

RIVERS, A.M.I.C.E., borough engineer, Harrogate.

Accepted tenders.

Carron Company, ironfounder	£925	10	0
F. Harvey, carpenter and joiner	505	0	0
Braby & Co., Ltd., cooper roofing	382	14	0
C. A. Nettleton, excavator and mason	320	7	9
Braithwaite & Co., glazier	177	14	0
W. H. Horn, Ltd., fibrous plaster	153	0	0
W. Norman, painter	52	0	0
Burgess & Co., wood block flooring, per yard	0	5	1

LEICESTER.

For extensions to Fairfax Mills. Messrs. TAIT & HERBERT, architects and surveyors, Leicester and Coventry.

Haskard, Rudkin & Beck	£2,149	0	0
Chapman & Co.	2,055	0	0
Herbert & Sons	2,039	0	0
Bentley & Co.	2,007	0	0
Tyers & Yates	1,965	0	0
F. ELLIOTT, Leicester (<i>accepted</i>)	1,897	0	0

LINSLADE.

For the erection of a Council School, for the Bucks County Education Committee. Mr. C. H. RILEY, Education architect, Aylesbury.

Edwards & Son	£1,895	0	0
Dawson	1,847	0	0
Honour & Sons	1,822	0	0
Adams, Whiting & Co.	1,811	0	0
Yirrell	1,794	0	0
Accock & Co.	1,680	0	0
WEBSTER & CANNON, Aylesbury (<i>accepted</i>)	1,678	0	0

LONDON.

For erection of offices for the National Union of Teachers. Mr. W. H. WOODROFFE, F.R.I.B.A., architect, 51 Lincoln's Inn Fields, W.C.

Foster & Dicksee	£38,883	0	0
Holloway Bros.	38,050	0	0
Holland & Hannen & Cubitt	37,985	0	0
Leslie & Co.	37,783	0	0
Carmichael	37,772	0	0
Ashby & Horner	37,274	0	0
Johnson & Co., Ltd.	37,185	0	0
Knight & Sons	36,277	0	0
Higgs & Hill, Ltd.	35,840	0	0
Perry & Co. (Bow)	35,834	0	0
F. & H. F. Higgs	34,880	0	0
Harris & Wardrop	34,790	0	0
Minter	34,715	0	0
Patman & Fotheringham, Ltd.	33,943	0	0
Lawrence & Son	33,670	0	0
Sabey & Son, Ltd.	33,638	0	0
G. E. Wallis & Sons, Ltd., Maidstone	33,330	0	0

For erection of a school for mentally defective children on the Bravington Road site, Paddington, for the London County Council.

General Building Co.	£4,224	12	0
Kearley	4,126	0	0
Garrett & Son	4,084	0	0
Triggs & Co.	4,020	0	0
Appleby & Sons	3,995	0	0
Roberts & Co.	3,975	0	0
Lole & Co.	3,839	0	0
W. F. Blay, Ltd.	3,822	0	0
Godson & Sons, Kilburn Lane (<i>recommended</i>)	3,550	0	0
Architect's estimate	3,857	0	0

For improvement and enlargement of the Randall Place School, Greenwich, for the London County Council.

Parker & Sons	£17,887	0	0
Appleby & Sons	16,888	0	0
Thomas & Edge	16,732	0	0
F. & H. F. Higgs	16,437	0	0
Wallis & Sons	16,242	0	0
J. & C. Bowyer	16,227	0	0
Leng	16,136	0	0
JOHNSON & CO., Wandsworth Common (<i>recommended</i>)	16,097	0	0
Architect's estimate	15,560	0	0

LONDON—continued.

For the construction of police buildings at Stoke Newington. Mr. J. DIXON BUTLER, F.R.I.B.A., architect, Surveyor to the Metropolitan Police District, New Scotland Yard, S.W.

Kearley	£9,100	0	0
Maddison	8,964	0	0
Monk	8,925	0	0
Newby & Bros.	8,900	0	0
Holloway Bros. (London), Ltd.	8,797	0	0
Downs	8,763	0	0
F. & H. F. Higgs	8,724	0	0
Higgs & Hill, Ltd.	8,696	0	0
Fryer & Co.	8,615	0	0
Symes	8,515	0	0
Chessum & Sons	8,472	0	0
Holliday & Greenwood, Ltd.	8,444	0	0
Shurmur & Sons, Ltd.	8,379	0	0
Dove Bros.	8,042	0	0
Jarvis & Son	7,960	0	0
Sabey & Son, Ltd.	7,892	0	0
C. Wall, Ltd.	7,847	0	0
Willmott & Sons	7,749	0	0
Grover & Son	7,684	0	0

MANSFIELD.

For the erection of the Nottingham Road U.M. Church and Schools, &c. Messrs. GEORGE BAINES & SON, architects, 5 Clement's Inn, Strand, London, W.C.

Boot & Sons	£6,759	0	0
Forsdike	6,720	0	0
Smith	6,200	0	0
Longdon & Son	6,180	0	0
Maule & Co.	6,175	0	0
Parnell & Son	6,105	0	0
Barlow & Co.	6,100	0	0
Short	6,090	0	0
Wright	6,075	0	0
Vallance & Son	5,878	0	0
Vallance & Blythe	5,775	0	0
Fish & Sons	5,766	11	4
Moore	5,750	0	0
Percival	5,700	0	0
Colborne	5,596	7	0
Perks & Son *	5,553	0	0

* Accepted with modifications, bringing the total amount to £5,519 13s. 2d.

PORTSMOUTH.

For erection, completion and maintaining in repair for six months the following work, for the Corporation—viz.: A boatswain's office, meters' office, labourers' room, and gentlemen's convenience at Flathouse Wharf. The BOROUGH ENGINEER, Portsmouth.

British Construction Co.	£983	0	0
McLaughlin & Co.	832	0	0
Wallis & Son	753	0	0
Playfair & Toole	715	0	0
Tanner	584	0	0
Till	579	0	0
Woods & Co.	565	0	0
JONES & SON, Portsmouth (<i>accepted</i>)	539	0	0

RICHMOND.

For extension to the public baths, Parkshot, for the Town Council. Mr. J. H. BRIERLEY, borough surveyor, Richmond, Surrey.

Lown & Co.	£3,954	0	0
Speechley & Smith	3,475	0	0
Peddle	3,424	0	0
Offer & Sons	3,376	0	0
Jarman & Co.	3,259	0	0
DOREY & CO., Brentford (<i>accepted</i>)	3,250	0	0
Pearson	3,249	0	0
Crosby & Co.	3,167	0	0
Borough Surveyor's estimate	3,250	0	0

SHEERNESS.For enlargement of the manual instruction room at the higher elementary school, for the Education Committee. A. W. PHILLIPS, Sheerness (*accepted*) . £677 12 0**SOUTHAMPTON.**

For the erection of Regent's Park School.

Playfair & Toole	£15,898	15	0
H. Stevens & Co.	15,561	0	0
JENKINS & SONS, LTD., Southampton (<i>recommended</i>)	15,164	0	0
Lear & Son	14,576	0	0
Borough Engineer's protecting tender	15,500	0	0

WALES.

For erection of thirty workmen's dwellings at Trefechan, Aberystwyth, for the Town Council. Mr. R. Jones, borough surveyor, Aberystwyth.

Evans & Sons	£6,656	0	0
Edwards	6,211	0	0
D. & M. Davies	5,673	0	0
Jenkins Bros.	5,227	10	0
E. E. Jenkins	5,189	9	0
EDWARDS BROS., Trefechan (accepted)	4,972	17	7
J. Humphreys	4,970	0	0
Surveyor's estimate	5,413	15	9

YORK.

For construction of the road track for the Bishopthorpe Road tramways extension, for the Town Council.

W. DOBSON, Edinburgh (accepted)	£15,147	5	6
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TOWN PLANNING SCHEMES.

A MEMORANDUM issued by the Local Government Board relative to the operation of the Housing and Town Planning Act (1909) mentions that twenty local authorities have been granted authority by the Board for the preparation of town-planning schemes. Three of these schemes—two by Birmingham Corporation affecting different areas in the city, and one by Rochdale—have been prepared and submitted for approval. Among the other local authorities that are preparing schemes are Bournemouth, Chesterfield, Halifax, Hanwell, Liverpool, Newcastle-on-Tyne, Sheffield, Southport, Stoke-on-Trent, and Walthamstow. Applications for authority to prepare schemes have been received from twelve other authorities, and 124 local authorities have proposals for schemes under consideration. The memorandum goes on to state that in many cases landowners are adopting better methods of developing estates without the formalities of town-planning schemes, and that the Act has had a good influence, quite apart from the actual preparation of schemes under it.

THE Board of Trade report on the state of the labour market in October says that employment continued good, and the upward movement in wages continued. Compared with last year, all the principal industries showed an improvement, and from the 383 trade unions making returns there was shown a further decrease in the percentage of unemployment. The changes in wages taking effect during the month affected 525,000 workpeople, and resulted in a net increase of nearly £25,000 per week.

AN American Consular report states that signs of continued increase in commercial and industrial activity in Venice and district have been everywhere visible during the last two years. Palaces and houses have been restored in the sumptuous old style, and improved by the addition of modern comforts; streets and canals have been enlarged, new bridges built, and a greater number of steamers, larger in size, have been plying between different parts of the city and to the islands.

At the last meeting of the Edinburgh School Board there were under consideration plans of the proposed supplementary school in the Bellevue district of the city. The plans showed a school providing accommodation for 960 pupils, in twenty-four class-rooms, with an allowance of 15 square feet per pupil. The total cost was estimated at £54,000, the main school building being £30,000, the workshop block £22,000, and laying out site, &c., £2,000. A member moved recommittal with the view of having plans prepared for a less costly school. They were proposing, he said, to spend £27,000 for amenity. It was agreed to remit the matter to the committee, with powers to get expert advice.

THE Sanitary Committee of the Carnarvon Town Council have practically completed an extensive housing scheme. One part provides for the erection of about sixty houses, some in blocks and the others semi-detached, on the Bethel Road. These may be described as of the better class of workmen's dwellings, having gardens both front and at the back, and they will be let for rents varying from 5s. to 6s. per week. It is expected that the total cost of building each house, including the land, will range from £230 to £260, and the whole outlay will not fall short of £16,000. Under the second part of the scheme it is proposed to put up some twenty or thirty houses in the south end of the town, in the neighbourhood of Hendre Street, and in this case the rent will not exceed 3s. to 4s. per week, the total cost being £4,000.

THE OLD LONDON G.P.O. FACADE.

IN July 1912 the First Commissioner of H.M. Works intimated that he was prepared to present to the London County Council the portico and pediment of the old General Post Office, St. Martin's-le-Grand. After considering the matter, the Local Government, Records and Museums Committee caused a reply to be sent to the effect that they were unable to recommend the Council to take advantage of the offer, owing to the fact that no site suitable for the re-erection of the facade was available. They suggested, however, that the facade might fittingly be re-erected in the proposed Shadwell Park, and, acting on this suggestion, the First Commissioner approached the King Edward VII. Memorial Committee on the subject. At the same time the Committee stated that in the event of this suggestion not being acted upon, they would consider as to recommending the Council to accept the facade, provided the First Commissioner undertook to take it down and preserve it until a suitable site was decided upon. It was, however, found that the available area at Shadwell Park was too restricted to admit of the re-erection there of the portico and pediment, and this proposal had therefore to be abandoned.

The First Commissioner subsequently stated that the Treasury was prepared to authorise expenditure for the removal and storage of the materials upon the condition that the portico and pediment should be re-erected within a definite period, and he inquired whether the Council would accept this condition. The Committee reported on Tuesday that in the absence of a suitable site for the facade they had no alternative but to inform H.M. Office of Works that the Council, while greatly appreciating the offer of the First Commissioner and the Treasury, was unable to specify a date for the removal and re-erection of the portico and pediment. As the matter was urgent, they gave instructions for a letter in these terms to be addressed to H.M. Office of Works.

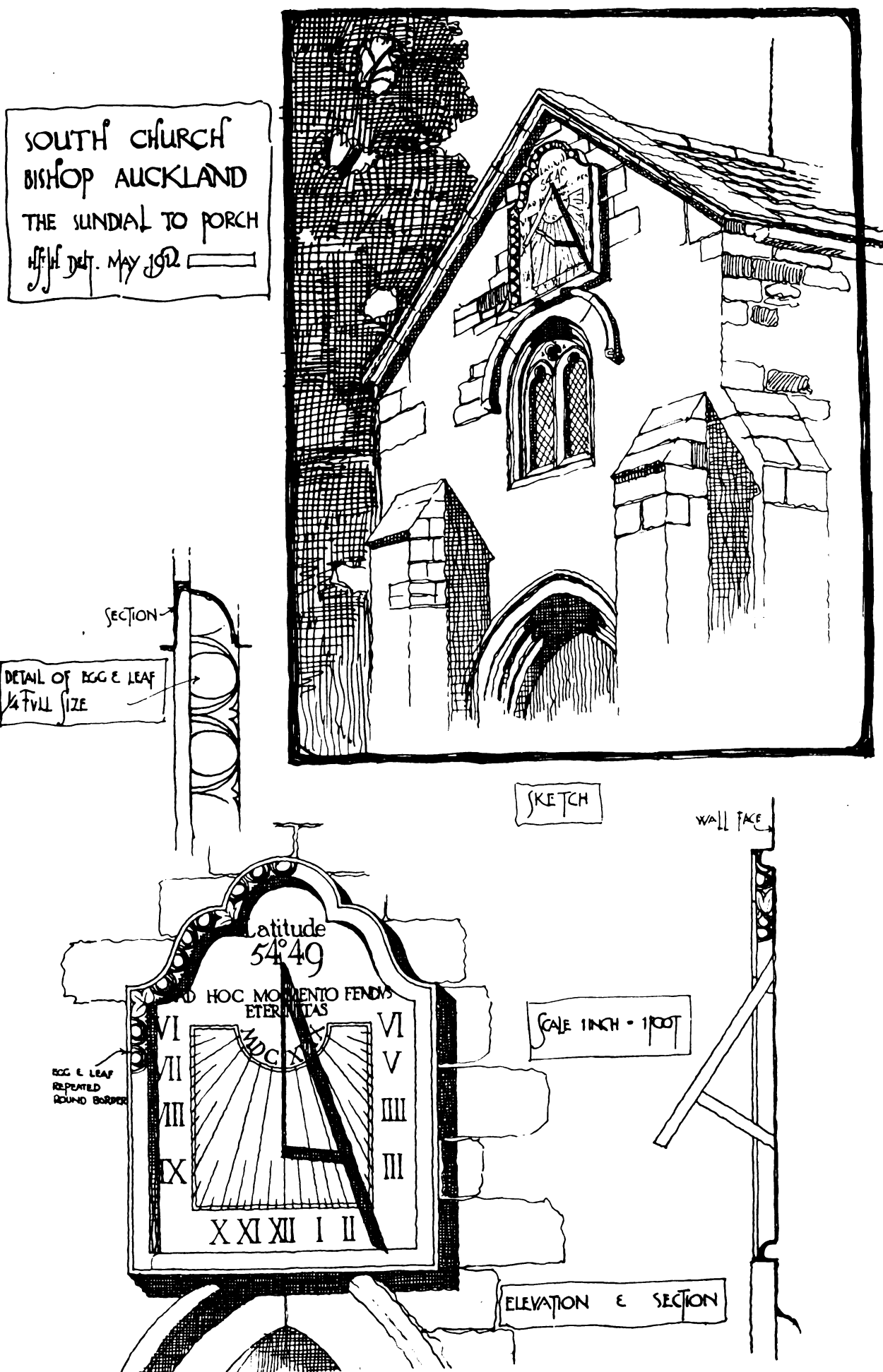
THE Corporation of Dublin have applied to the Local Government Board for Ireland for their sanction to loans of (1) £28,100, (2) £2,000, and (3) £4,000, for the purposes of (1) extending electrical cables and the electricity generating station buildings, (2) extending the underground public conveniences at Nelson's Pillar, and (3) acquiring property in Castle Street for municipal offices.

THE Glasgow Corporation Special Committee on Cottages for the Working Classes have instructed Mr. A. B. McDonald, the city engineer, to prepare a building plan for an area of twenty acres of the ground at Riddrie belonging to the Corporation, showing twelve houses to the acre, in terraces of eight on each side, being 240 in all. The houses are to be of the cottage type, and the rents are not to exceed £18 each.

THE Essex Education Committee, at their last meeting, adopted plans for the enlargement of the Council School, Laindon Hills, at an estimated cost of £2,160. Plans for the erection of a new infants' Church of England school, Brentwood, for 220, were approved, subject to one or two minor suggestions; and also plans for the addition of three new class-rooms and a cloak-room at St. Helen's R.C. School, subject to certain improvements in the lighting arrangements. The following tenders for the erection of new schools were accepted:—Mattock Bros., Wood Green, £4,117, South Chingford School for 300 infants; J. Rayner, East Hanningfield, £1,115 15s. 6d., Cold Norton School for 80; F. Hutton, £140, Frinton new handicraft centre; F. J. Coxhead, Leytonstone, £1,798, Woodford special instruction school.

WE recently received from Mr. J. E. C. Lord, of Borough Road, Weaste, Manchester, two samples of "Uleto" wood preservative. This liquid is obtainable in four shades of brown, two of green, and also in red. Each shade is manufactured in both exterior and interior qualities; the latter is much quicker in drying properties, and is free from objectionable odour. Some variety of finish is possible. Thus "Uleto," after being treated with a special priming solution, may with satisfactory results be varnished over or polished with beeswax or oil. Mr. Lord specially recommends the brown shades as being the most powerful preservative and antiseptic; they are also somewhat cheaper than the others. It is said that one gallon will cover about 450 square feet of hard planed wood. Any cheap preventative against dry rot is worth careful attention from architects, contractors, and building owners. "Uleto" is put forward as both useful and ornamental. Our sample shows it to be the latter; and past experience has proved it to possess the former quality.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



From a Drawing by Mr. H. St. J. HARRISON.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BEDFORDSHIRE.

Bedford.—House, Bromham Road, for Miss Dawes.
Two houses, Honey Hill Road, for Mr. W. H. Izzard.
House, London Road, for Captain Brightman.
House, Priory Street, for Mr. F. Parrott.
No. 27 Tavistock Street: additions. Messrs. J. Corby & Son, builders.

CHESHIRE.

Ellesmere Port.—Picturedrome, Whitby Road. (Accommodation for 600.) Mr. H. P. Beckett, architect.
Frodsham.—Sunday school extension.
Tarporley.—Council (British) School: additions and alterations. Mr. H. Beswick, F.R.I.B.A. (of Chester), architect.

CORNWALL.

Camborne.—House. Mr. S. Hill (of Redruth), architect.
Lostwithiel.—Drill Hall for the County Territorial Force Association. Mr. O. R. Caldwell, F.R.I.B.A. (of Penzance), architect.
Porthleven.—Drill Hall for the Boys' Brigade and Scouts.

CUMBERLAND.

Carlisle.—Technical school.

DERBYSHIRE.

Brampton.—Parish Room.
Chesterfield.—Church, Lower Brampton.
Clay Cross.—Church schools: enlargement.
Holymoorside.—Mission Church: additions and alterations.
Walton.—Mission Church.

DEVON.

Newton St. Cyres.—Parish Church: restoration (£2,000).

DORSET.

Weymouth.—St. Paul's Church, Westham: Baptistery.

DURHAM.

Sunderland.—Council School for boys.

ESSEX.

Baddow, Little.—Three pairs of working-class cottages: Council architect of Chelmsford; also
Danbury.—Three pairs of working-class cottages; also
Sandon.—Two pairs of working-class cottages (in all £2,500).
Brentwood.—Infants' C. of E. school for 220 places.
Girls' Secondary school for 200 places.
Chelmsford.—Two pairs of houses, Braemar Avenue. Mr. W. Fincham, builder.
House, Rainsford Avenue. Messrs. Johnson & Hawkes, builders.
Pair of houses, Swiss Avenue, for Messrs. Bradley & Barnard.
Pair of houses, Swiss Avenue, for Messrs. Weston & Holmes.
Five pairs of houses, Baddow Road, for Mr. T. G. Gozzett.
House and stable, Mildmay Road, for Mr. A. J. Gozzett.
Clacton, Little.—Council School.
Cranbrook.—Wesleyan Church.
Danbury.—See above.
Laindon Hills.—Council School enlargement (£2,200).
Romford.—Workhouse Infirmary: children's isolation block.
Sandon.—See above.

HERTFORDSHIRE.

Cheshunt.—Conversion of five houses into College for Women, for the Ruskin Educational Association.

LANCASHIRE.

Bolton.—Eastern Fever Hospital: consumptives' pavilion and extension to the Administrative Block. Messrs. W. Townson & Sons, Ltd., builders.
Twenty-one houses, Lingholme Avenue, for Mr. Bramhall.
Cotton Mill, Gilnow Lane, for Messrs. Salmon & Taylor (of Deane).
Mill, Saville Street: addition for Messrs. Thomas Taylor, Ltd.
"Eagle" Mill: addition for Messrs. J. Crook & Co.
Works: addition for Messrs. Bridson & Sons, Ltd.

Lancaster.—Asylum: villas for private female patients (£30,000).

LEICESTERSHIRE.

Leicester.—Baptist Church, London Road (near Knighton Road).
Church, Western Park.

NORTHAMPTONSHIRE.

Kettering.—Six houses with shop, Gladstone Street. Messrs. Phillips & Slow, builders.

NORTHUMBERLAND.

Haltwhistle.—Board of Guardians' Children's Home for twelve.

NOTTINGHAMSHIRE.

Huthwaite.—Council School.
Sutton-in-Ashfield.—Mixed Council School, Huthwaite Road (accommodation for 500 children).
Worksop.—Church schools.

SHROPSHIRE.

Shrewsbury.—Drill Hall, Coleham, for the County Territorial Force Association. Mr. F. H. Shayler, F.R.I.B.A., architect.

SOMERSET.

Bruton.—King's School: additions and alterations. Mr. A. J. Pictor, A.R.I.B.A., architect.
Taunton.—Picture Palace and theatre (for 1,100 sittings). Messrs. Stone (A.R.I.B.A.) & Lloyd, architects.

STAFFORDSHIRE.

Biddulph.—Central Council School enlargement, 110 places.
Brierley Hill.—Moor Street Council School: infants' department for 350 places.
Dorey.—Church Room.
Leek.—Twenty-one houses, Spring Gardens. Messrs. Bayley & Morris, builders; also
Houses off Shirley Street.
Lichfield.—Board of Guardians' Offices (£1,000).
Stafford.—Headquarters, Bailey Street, for the 6th Staffordshire Battery, R.F.A.
Diocesan Library and Vestry, St. Mary's. Mr. A. B. Jackson, F.R.I.B.A. (of London), architect.
Stoke-upon-Trent.—Dispensary, corner of Victoria and Shirley Roads.
Council School, Penkhull: extension.
Tamworth.—St. John's School: enlargement.

SURREY.

Chertsey.—Girls' Secondary School.
Croydon.—Church of St. Michael and All Angels, Poplar Walk: Tower. Messrs. Luscombe & Son (of London), contractors.
Hall, Whitgift Street: additions for Mr. W. T. Taylor.
Twelve houses, Ederline Avenue, for Messrs. W. Aston & Co.
House, 25 Melville Avenue, for Mr. K. J. Young.
Six houses, Strathyre Avenue, for Mr. J. E. Trimble.
Three houses, Woodside Green, for Mr. P. Richardson.
Six houses, Pollards Hill West, for Mr. O. Gray.
Three houses, Clyde Road, for Mr. C. H. Gibson.
Seven houses and shops, Lower Addiscombe Road, for Mr. C. Taylor.
Three houses, Teevan Road, for Mr. R. B. Manser.
Mission Hall, Boston Road. Mr. E. J. Saunders, contractor.
Vicarage, Elmwood Road. Messrs. W. Smith & Sons, contractors.
Fire station, Brigstock Road, Thornton Heath (£7,500). Borough engineer.
Carnegie Branch Library, Brigstock Road, Thornton Heath.
Frensham Common.—Pumping station for the Wey Valley Water Co.
Guildford.—"Astolat," Semaphore Road: additions for Mr. W. G. Clarke.
"Lorelei," Weston Road: additions for Mr. A. Messenger.
House, Wodeland Road, for Messrs. Rutter & Co.
Municipal Offices, Tunsgate. Mr. C. G. Mason, Borough surveyor.

WARWICKSHIRE.

Erdington.—Council Elementary school, Ryland and Bracebridge Roads (for 1,200 places).
Council Special School, Bristol Street (£4,750).

WESTMORLAND.

Tebay.—L.N.W. Railway Co.'s station.

ENGLAND—continued.

WORCESTERSHIRE.

Dudley.—Great Hospital: extensions (£10,000).

Worcester.—School for 420 places, St. Paul's (£3,400).

Messrs. A. H. (F.R.I.B.A.) & A. G. Parker, architects.

Messrs. J. & H. Stokes, contractors.

YORKSHIRE.

Bradford.—Board of Guardians: Children's Home, Thackley. Mr. F. Holland, architect.

Conisburgh.—Parish Church: restoration and improvement (£2,200).

Goole.—(Supp. to Nov. 15.)—Workhouse: additions and alterations. Messrs. Thorp & Turner, architects. Messrs. Jackson & Oates, contractors (£4,100).

Harrogate.—Royal Pump Room: annexe (£2,700).

Tinsley.—Council School, Plumpers Road: alterations and extensions. City architect of Sheffield.

Whitby.—Villas, Dunsley Lane. Mr. G. S. French, architect.

WALES.

Cardiff.—Offices for the Insurance Act Commissioners, the Labour Exchange, &c. (£70,000 to £80,000).

Denbigh.—Market Hall, &c. Messrs. John Brooke (F.R.I.B.A.) & Elcock (of Manchester), architects.

Fordeu.—Lunatic Asylum.

Llanelly.—Electric Theatre, New Dock Road. Mr. O. P. Bevan, P.A.S.I. (of Merthyr Tydfil), architect.

Newtown.—Welsh National Memorial.

Pennygraig.—St. Barnabas Church (£2,500).

Police-station.

Pontypridd.—Church and Institute for the Glamorgan Mission to the Deaf and Dumb, Tyvica Road. Mr. E. Rees, architect.

SCOTLAND.

Dundee.—House, Tullideph Road, for Messrs. J. Foggie & Son.

Glebelands School: reconstruction.

Stobswell School: metal workshop (£540).

Edinburgh.—Crematorium, Warriston Cemetery, for the Crematorium Society.

Public wash-houses, Fountainbridge (£6,000).

Girvan.—"King's Arms" Hotel: extensions and improvements.

Glasgow.—Episcopal Church, Crownpoint Road.

Terrace of seven houses, Ravenshall Road, Shawlands.

Messrs. W. Wallace & Sons, builders.

Houses, Auchinairn Road. Messrs. J. Marshall & Sons, builders.

Electrical engineering works, Broad Street, Mile End: additions for Messrs. Mavor & Coulson, Ltd.

Phoenix Cabinet Works, London Road, Parkhead: additions for Messrs. J. Walker & Sons.

Picture Theatre, Shettleston, for Mr. G. A. Scott.

Lochwinnoch.—Sanatorium (King Edward Memorial).

Montrose.—Villa, The Mall, for Mr. A. Hurry (£900).

Newtonmore.—Public Hall (£1,300). Separate trade contractors.

IRELAND.

Granard.—Twenty-four working-class lodging houses (£3,400).

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 19,853. Sept. 6, 1911.—Date claimed under International Convention Sept. 6, 1910. Improvements in hollow reinforced-concrete floors, ceilings, and the like. Emile Klée, 12 rue de la Pepiniere, Brussels. This invention consists in constructing a hollow concrete floor or ceiling with concrete beams, with inclined struts connected together by transverse iron rods located in cuts or recesses provided in the beams, and the beams and transverse iron bars are fastened together by means of wire twisted round the beams and rods. Fig. 1 is a perspective view of the reinforced-concrete beams for forming the floor and the ceiling. Fig. 2 is a perspective view of the reinforced-concrete beams made capable of receiving nails with differently applied accessories for forming the ceiling and the floor. The reinforced-concrete beams, A, of the form shown are moulded with struts, A¹, on each side of a web, which struts are inclined outwards towards the right on one side and towards the left on

the other side. A braced beam is thus formed. The beams have reinforcing rods for increasing their strength by taking up the tension and shearing-stresses, and transmitting the weight of the load to the walls. In forming a floor the beams are joined together laterally by rods, o, located in recesses provided in the beams, and fastened to the beams by means of wires lying in recesses provided in the flanges of the beams. The concrete flooring, c (fig. 1), is cast or arranged on an arched slab, b, serving as a support, and resting between the

Fig. 1.

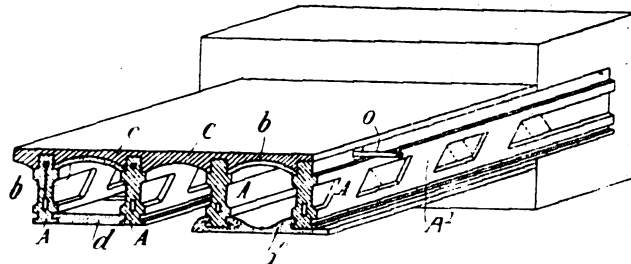
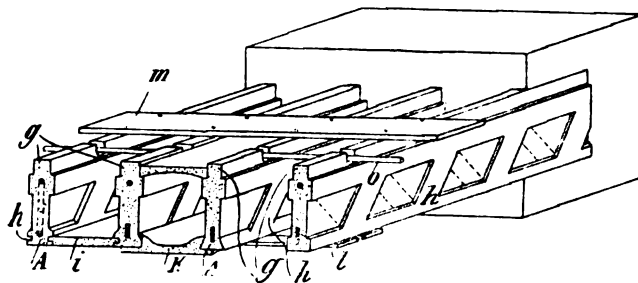


Fig. 2.



beams, A, or on a suitable centering, which is subsequently removed. The concrete ceiling is formed correspondingly to the floor or by means of the flat slabs, d (fig. 1), and i (fig. 2), or cast upon centering, as at f (fig. 1) and k (fig. 2). The upper and lower parts, g and h, of the reinforced-concrete beams, A, in fig. 2, are made capable of receiving nails. They thus replace wooden girders. Thus planks or boards, m and l, can be nailed on to the parts g and h. The material for receiving the nails is composed of one part of cement, two parts of hot asphalt powder, half part of shavings, which elements are moistened with water containing 52 per cent. of kaoline, and the whole is rammed. Sept. 18, 1912.

PATENT SPECIFICATIONS PUBLISHED
NOVEMBER 28, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 17,563. Aug. 2, 1911.—F. R. G. Richards, 10 Meriden Street, Coventry. Treatment of iron or steel for preventing oxidation or rusting.

21,763. Oct. 3, 1911.—Samuel Elliott, Silverdale, Henley Road, Caversham, near Reading. Process and appliances for drying or seasoning timber.

24,032. Oct. 30, 1911.—Date claimed under International Convention, Oct. 31, 1910. M. J. Poulain, 29 Ave de Wagram, Paris. Heating devices.

24,198. Nov. 1, 1911.—D. E. Davies, 61 Ladypool Road, Sparkhill, Birmingham. Appliances for cleaning by vacuum.

25,218. Nov. 13, 1911.—Date claimed under International Convention, May 15, 1911. James Burke, of The Burke Electric Co., Erie, Penn., U.S. Apparatus for purifying and humidifying air.

25,334. Nov. 14, 1911.—Horace Harsant, 7 Laurel Grove, Penge, S.E., and The Mitchelite Petrol-Air Gas System Co., Ltd., 48 Mark Lane, E.C. Manufacture of petrol gas for lighting purposes.

24,432. Nov. 3, 1911.—H. F. Berry, 9 Victoria Street, Westminster, S.W. Apparatus for heating and drying stone and other materials for use on roads and like surfaces.

24,555. Nov. 4, 1911.—W. C. Edwards, jun., 3220 Agnes Avenue, Kansas, U.S.A. Reinforced concrete structures.

24,486. Nov. 3, 1911.—H. T. Harrison, 11 Victoria Street, Westminster. Lanterns and lamp carriers, more particularly for street lighting purposes.

27,937. Dec. 12, 1911.—Chas. Kirby, 62 Trinity Road, West Bromwich, Staffs. Construction of water heaters.

29,077. Dec. 27, 1911.—Geo. Wilkinson, Adam Boulton, and Joseph Finney, of The Randlay Brick and Tile Co., Wellington, Salop. Building bricks and blocks.

351. Jan. 4, 1912.—William Guest, 42 Mayhill Road, Charlton, Kent, and Hugh Lennox, Garthowen, Ashstead, Surrey. Manufacture of tanks.

26,101. Nov. 22, 1911.—C. W. Martin, Tory Street, Wellington, New Zealand. Electric heating of ovens and other appliances.

26,133. Nov. 22, 1911.—M. J. Railing and J. H. Collings, 67 Queen Victoria Street, E.C. Means for supporting lamp shades and globes.

26,373. Nov. 25, 1911.—Frankenburg & Sons, Ltd., Greengate Rubber and Leather Works, Greengate, Salford, and Edward Fleming. Holders for electric lamps.

26,927. Dec. 1, 1911.—W. J. Dibdin, 2 Edinburgh Mansions, Howick Place, Victoria Street, S.W. Sedimentation tanks for treatment of sewage and other foul waters.

3,255. Feb. 9, 1912.—William Blakeley, of Blakeley, Sons & Co., Ltd., Thornhill, near Dewsbury, York. Gas-holders.

3,967. Feb. 16, 1912.—Date claimed under International Convention, Feb. 20, 1911. Georges Rigot, 29 Rue de la Fontaine au Roi, Paris. Waste-preventing cock for water.

4,159. Feb. 19, 1912.—J. M. Wilson, 30 Church Street, New York, U.S.A. Vacuum apparatus for removing paint and varnish.

5,913. Mar. 9, 1912.—J. D. Prior, 197 Holliday Street, Birmingham. Boilers of domestic fire grates.

7,056. Mar. 22, 1912.—Joseph Southall, Enderlie, Selborne Road, Worcester. Lamp pillars for electric lighting.

7,994. April 2, 1912.—Otto Simonis, Pretoria Works, Walthamstow, N.E. Methods of extinguishing fire.

9,156. April 18, 1912.—Date claimed under International Convention, April 18, 1911. E. H. Rieter-Bodmer, 17 Via Magenta, Turin, Italy. Fibrous cement plates.

10,958. May 8, 1912.—Jens Petersen, Vedbygaard, Ruds Vedby, Denmark. Preparation of paints, impregnating compositions, and the like.

12,637. May 29, 1912.—Ralph Lees and William Lees, Park Foundry, Hollinwood, near Oldham. Wood-tenoning machines.

12,938. June 1, 1912.—J. Jochims, 11 Schwogenstr., and A. Kleinle, 234a Crefelderstr., Munchen-Gladbach, Germany. Manufacture of gilled pipes.

13,967. June 15, 1912.—G. R. Hislop, Greenhill House, Paisley. Kitchen ranges and other solid-fuel burning stoves.

12,636. May 29, 1912.—G. R. Hislop, Greenhill House, Paisley, N.B. Burners for use in connection with gas fires, gas-heated radiators, gas cooking stoves, and the like.

12,928. June 1, 1912.—Carl Rohrer, 51 Luisenring, Mannheim, Germany. Chimneys and ventilating shafts.

12,993. June 3, 1912. Alexander Gibb, St. Martin's Abbey, Perthshire; T. G. Menzies, Ferry Craig, North Queensferry, Fifeshire, N.B.; and Robert Chalmers, Rhuaada, Newport, Fifeshire. Driving and extracting of piles, posts, and the like.

14,800. June 25, 1912.—Richard Brierley, 27 Fylde Street, Preston. Water-heating apparatus.

15,287. July 1, 1912.—J. H. Coffmann, 2753 North Garnet Street, Philadelphia. Door stop and holder.

17,301. July 25, 1912.—Max Fleischmann, 28a Zoblitzerstr., Olbernhau, Germany. Drawing boards.

17,782. July 31, 1912.—Otto Wetzel and August Kuntz, 2 Romerstr., Heidelberg, Germany. Automatic lubricating apparatus for elevators, conveyors, and the like.

1,296. Jan. 16, 1912.—C. A. Muller, Gelsterstr., Witzhausen, Germany. Locks.

10,498. May 3, 1912.—F. A. Homer, 109 Gower Street, London. Tap for water, steam, or other fluids.

THE Portland cement industry of New South Wales has been marked by a steady growth during the past ten years. In 1902 the value of the cement production was £46,500; in 1911 it amounted to £315,569—an increase of £64,459 over the total for the preceding twelve months. The Commonwealth Portland Cement Co., Ltd., is the chief producer; but large quantities are also manufactured by Messrs. Goodlet & Smith, Ltd., at their Granville Works. The lime manufactured during 1911 was 29,930 tons, valued at £32,918.

VARIETIES.

THE late Mr. George Wilson, F.R.I.B.A., of 19 Broadburn Terrace, Edinburgh, left personal estate valued at £30,405.

THE Public Works Committee of the Birmingham Corporation have been authorised to reconstruct the railway bridge in Witton Road at an estimated cost of £4,500. The present brick-arch bridge will be replaced by one of girders.

THE Belfast Master Builders' Federation on Monday sent a deputation to attend the meeting of the Belfast Corporation, when a protest was made against the growing tendency to carry out important municipal works by direct labour.

THE Tynemouth Education Committee is about to appoint an architect or architects for the erection of one or two new elementary schools, and invites applications by Tuesday next, the 10th inst., for appointment from architects living or practising within a radius of 12 miles from the borough of Tynemouth; the engagement will be at the usual rate of commission.

THE special committee of the Nottingham City Council appointed to consider the future of the borough architect's department has recommended that Mr. Arthur Dale, the present assistant city architect, be appointed city architect at a salary of £450, and that Mr. F. B. Lewis, the retiring city architect, be retained as consulting architect at £250 per annum.

THE first annual staff dinner of Messrs. Bovis, Ltd., building contractors, of Upper Berkeley Street, W., took place on Saturday last, the 30th ult., at the Victoria Mansions Restaurant, S.W., when a company fully representative of the building trade and its various branches assembled under the chairmanship of Mr. Josephs, one of the founders of the firm, who was supported by his fellow-director, Mr. Gluckstein. Messrs. Bovis are a young firm, but, judging by the sentiments uttered during the evening, they bid fair to become a power in the building world in the not far distant future.

TRADE NOTES.

MESSRS. SIEMENS BROTHERS' DYNAMO WORKS, LTD., have obtained a renewal order for the supply of "Wotan" pure-drawn Tungsten lamps for the whole of the street lighting for the Brighton Corporation during the next twelve months.

UNDER the direction of Mr. Lloyd Roach, A.M.I.C.E., surveyor to the Urban District Council, Tredegar, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Council Chamber, Tredegar.

MESSRS. OETZMANN & Co., LTD., 67-79 Hampstead Road, W., are making their customary display of Christmas and New Year gifts. Being complete house furnishers, the firm open a wide field of choice to their customers. If a personal visit to the large showrooms is impossible, application should be made for their illustrated catalogues.

H.M. TRADE COMMISSIONER for Canada reports to the Board of Trade that a firm at Montreal, who state that they have business connections with architects and builders in that city, are desirous of obtaining agencies to cover Montreal and Quebec of British manufacturers of builders' supplies, such as architectural terra cotta, firebricks, tiles, steel window sashes, &c. The name and address of the firm may be obtained by British manufacturers on application to the Commercial Intelligence Branch, 73 Basinghall Street, London, E.C. Any further communications should be addressed to H.M. Trade Commissioner for Canada, 120 Board of Trade Building, Montreal.

MESSRS. E. H. SHORLAND & BROTHER, LTD., of Fails-worth, Manchester, have recently supplied their warm-air ventilating patent Manchester stoves with descending smoke flues to the Melbourne Road Schools, Cambridge. Among the firm's other contracts are the following: The Tredington Isolation Hospital, Glos., is being supplied with double-fronted Manchester stoves with descending smoke flues, Manchester grates, patent exhaust-roof and inlet ventilators; the new Infectious Diseases Hospital, Thornton, Fife, is being supplied with Manchester stoves and grates; the new Billiard Hall and Picture Palace, Fleetwood, are being ventilated by patent exhaust-roof ventilators; and the Festiniog Urban District Council Assembly Rooms and the Electric Palace of Varieties, Belper, are being ventilated by means of Shorland's exhaust-roof ventilators and patent hygienic inlet ventilating panels.

THE Architect and Contract Reporter.

FRIDAY, DECEMBER 13, 1912.

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AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made. Subscription, \$5.20.

AGENTS FOR AUSTRALIA, NEW ZEALAND, TASMANIA AND CANADA.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 ls. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

JAMAICA.—Jan. 31.—The Mayor and Council of Kingston offer a prize of £100 for a design for municipal buildings (suitable for construction in reinforced concrete) to cost not more than £9,000. Charge 2s. For information apply to Messrs. Alexander Young (London), Ltd., 60 Fenchurch Street, London, E.C.

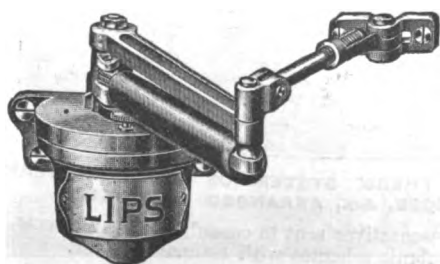
NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

CONTRACTS OPEN.

ALTRINCHAM.—Dec. 30.—For erection of shelter and conveniences at the recreation ground, Broadheath, in accordance with revised plans. Mr. H. E. Brown, surveyor, Town Hall, Altrincham.

(Continued on page 7.)

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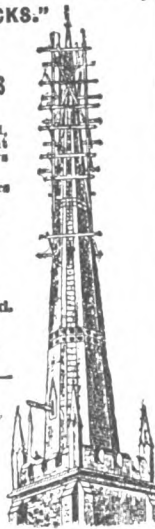
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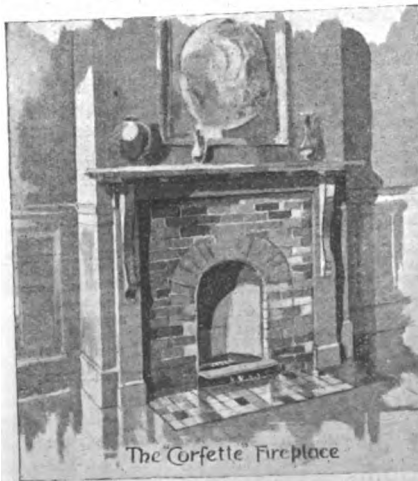
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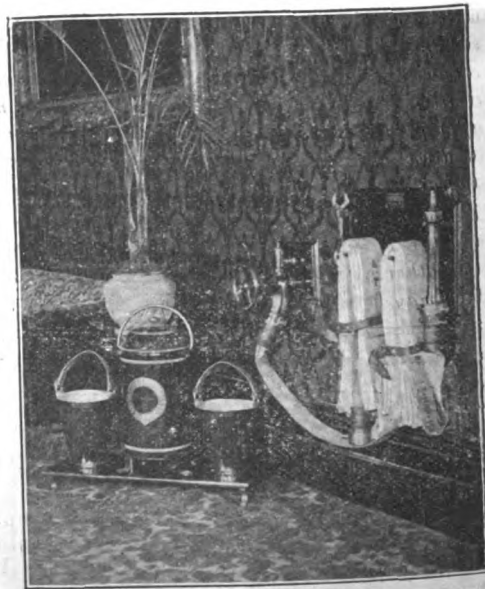
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FIRE PROTECTION
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HOSE, &c., ARRANGED COMPLETE.**

Expert representatives sent to consult with Architects, and submit schemes with estimate of cost.

MERRYWEATHER & SONS (Ld.),
63 Long Acre, W.C. Works: Greenwich, S.E., London.

BARNSELY.—Dec. 17.—For the excavator, mason and bricklayer, carpenter and joiner, plumber and glazier, and electricians' works required to be done in erection and completion of six houses, outbuildings, and boundary walls in Park Street. Messrs. Crawshaw & Wilkinson, architects, 13 Regent Street, Barnsley.

BECKENHAM.—Dec. 16.—For certain alterations at the Technical Institute, for the Kent Education Committee. Mr. F. Stevens, local secretary for education, Urban District Council Offices, Beckenham, or at the offices of the Committee, Caxton House, Westminster, S.W.

BINGLEY.—Dec. 20.—For erection of Bingley new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Postmaster, Bingley, and H.M. Office of Works, &c., Storey's Gate, S.W.

BIRKENHEAD.—Dec. 16.—For forming and draining the proposed paths, for providing and fixing new entrance gates, and for the erection of conveniences and shelters in the proposed recreation ground, Birkenhead Park, for the Corporation. Deposit 5s. Mr. C. Brownridge, M.I.C.E., borough engineer and surveyor, Town Hall, Birkenhead.

BIRKENHEAD.—Dec. 16.—For construction of a roof at the abattoirs, New Chester Street, for the Corporation. Deposit 5s. Mr. C. Brownridge, M.I.C.E., borough engineer and surveyor, Town Hall, Birkenhead.

BLACKBURN.—Dec. 14.—For the following works required to be carried out at Freckleton Street Baths—viz.: joiners' work, plumbers' work, tilers' work, painters' work. Send in names and 10s. deposit by Dec. 14 to Mr. W. Stubbs, A.M.I.C.E., borough engineer, Municipal Offices, Blackburn.

BRADFORD.—Dec. 21.—The Education Committee invite tenders for various works required to be done at the following:—Alterations to conveniences: Barkerend, Bradford, Moor, and Horton Bank Top schools. Alterations Technical College. Erection of boundary walls, &c., Textile Department. The City Architect, Town Hall, Bradford.

BRAINTREE.—Dec. 21.—For erection of a caretaker's lodge, dressing boxes, &c., at their new open-air swimming bath, for the Urban District Council. Mr. H. H. Nankivell, Surveyor's Office, Vestry Hall, Braintree.

BRIDLINGTON.—Dec. 16.—For pulling down and rebuilding premises, King Street and Chapel Street. Deposit 10s. Mr. T. B. Atkinson, architect, 11 Trinity House Lane, Hull.

BRIDLINGTON.—Dec. 17.—For making alterations in the People's Palace Buildings. Messrs. S. Dyer & C. F. Johnson, joint architects, 29 Quay Road, Bridlington.

BRISTOL.—Dec. 23.—For erection of Bristol, North, new sorting office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. F. A. Huntley, H.M. Office of Works, Small Street, Bristol, and H.M. Office of Works, &c., Storey's Gate, S.W.

BROCKENHURST.—Dec. 30.—For the reconstruction of the superstructure of Brockenhurst Bridge, consisting of two 20 ft. spans of steel decking, for the Hampshire County Council. Deposit £2 2s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

CARLISLE.—For the whole or any of the various trades required in remodelling St. John's Girls' School. Send names at once to Mr. H. Higginson, Lic.R.I.B.A., architect, 4 Lonsdale Street, Carlisle.

CHESTERFIELD.—Dec. 19.—For erection of a lock-up court-house and deputy chief constable's residence, &c., in Tapton Road and Malkin Street, for the Standing Joint Committee for Derbyshire. Deposit £2 2s. Messrs. Hunter & Woodhouse, architects, Belper.

CHILDSWICKHAM.—Jan. 17.—For altering and extending Childswickham Council School, near Broadway, Glos. Send names and £2 2s. deposit by Dec. 17. Mr. R. S. Phillips, architect, Shire Hall, Gloucester.

CONSETT.—Dec. 17.—For proposed rebuilding of Edinborough House, Middle Street, Consett, Durham, for Messrs. Isaac Tucker & Co. Mr. J. J. Eltringham, Lic.R.I.B.A., architect and surveyor, Blackhill.

EAST HAM.—Jan. 21.—For erection of Brampton Road school to accommodate 1,491 scholars. Send application by Dec. 31 to Mr. R. L. Curtis, architect to the Education Committee, 11-12 Finsbury Square, London, E.C.

EXETER.—Dec. 23.—For the extension of the isolation hospital, Whipton, near Exeter, for the Corporation. Deposit £1 1s. Mr. T. Moulding, M.I.C.E., city engineer and surveyor, 7 Southernhay West, Exeter.

FARNHAM.—Dec. 17.—For erection of five cottages at Darvill's Lane, for the Urban District Council. The Surveyor, Council Offices, South Street, Farnham.

GLASGOW.—Dec. 18.—For the following works of proposed additional storey at the Royal Infirmary—viz.: (1) mason and brick; (2) carpenter, joiner, glazier, and ironmonger; (3) slater; (4) plumber; (5) plaster; and (6) tile. Deposit 10s. 6d. for each schedule. Mr. Millar, A.R.S.A., architect, 15 Blythswood Square, Glasgow, and Mr. P. Rintoul, secretary, 212 West George Street, Glasgow.

GREENFORD.—For erection of houses at Greenford, Middlesex. Send names and references to Mr. W. S. Dakers, architect, Vernon House, Bloomsbury Square, W.C.

IRELAND.—Dec. 17.—For the erection and completion of sanatorium, comprising main and secondary blocks, medical superintendent's house, laundry and engine house, &c., at Ryehill, near Athenry, co. Galway, and for a dispensary in the town of Galway, for the Sanatorium Committee of the Galway County Council. Deposit £2 2s. Mr. W. A. Scott, A.R.H.A., A.R.I.B.A., architect, 45 Mountjoy Square, Dublin.

IRELAND.—Dec. 20.—For the erection and furnishing of National school buildings at Milltownpass, county Westmeath. The Office of Public Works, Dublin, and the Royal Irish Constabulary Barracks, Rochfort Bridge.

IRELAND.—Dec. 20.—For erection of a vested school in Tate's Avenue, Belfast. Deposit £2 2s. Mr. T. Houston, architect and civil engineer, Kingscourt, Wellington Place, Belfast.

IRELAND.—Jan. 15.—For the building of thirty labourers' and fourteen artisans' cottages at Workhouse Road, Ballina, for the Urban Council, together with boundary walls, sewers, roads, &c. Charge 5s. Mr. J. S. Cairns, C.E., architect, Ballina.

KENDAL.—Dec. 18.—For the various artificers' works in converting the old brewery premises, Wildman Street, into a steam laundry, for Mr. A. Pickles. Mr. J. Stalker, M.S.A., architect, Kendal.

LONDON.—Dec. 19.—For building a relief station at Blackwall Lane, East Greenwich, for the Guardians. Deposit £2. Mr. A. Roberts, F.R.I.B.A., 92 London Street, Greenwich.

NEWCASTLE-ON-TYNE.—For alterations to schoolroom of Central Primitive Methodist Church, Northumberland Road, mainly joiners' work. Messrs. T. E. Davidson & Son, architects, 1 Eldon Square, Newcastle-on-Tyne.

PAYHEMBURY.—Dec. 17.—For reconstructing the Vicarage House and erecting new farm buildings for the Rev. H. L. Parry. Deposit £3. Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

PETERSFIELD.—Dec. 20.—For the reconstruction of a small bridge, known as Fore Bridge, Petersfield, for the Hampshire County Council. Deposit £2 2s. Mr. W. J. Taylor, County surveyor, The Castle, Winchester.

PRESTWICH.—Dec. 23.—For erection of buildings and walls in connection with the extensions of the Council's town's yard and stables. Deposit £1 1s. Mr. S. H. Morgan, A.M.I.C.E., surveyor, Council Offices, Prestwich, near Manchester.

ROTHERHAM.—Dec. 16.—For the various works required in the laying out of the new Maltby cemetery and the erection of a lych gate. Send names by Dec. 16 to Mr. J. Totty, architect and surveyor, Moorgate Street, Rotherham.

SCOTLAND.—Dec. 21.—For excavator, mason, brick, smith, carpenter, joiner, ironmonger, glazier, plaster and concrete, plumber, slater, and roof tiling works for two blocks of four and three cottages and one cottage, with attics for attendants, to be erected at Dechmont Village, Uphall, for the Edinburgh District Board of Lunacy. Mr. J. Kyd, clerk and treasurer, Chambers, Castle Terrace, Edinburgh.

SCOTLAND.—Dec. 23.—For the construction of 1,110 lineal feet, or thereby, of timber wharfing in front of the south quay of Kingston Dock, and the erection of a goods shed, about 1,088 feet long by 60 feet wide, embracing excavator, mason and brickwork, steelwork, timber work, glazier work, slating, plumber work, painter work, and causewaying of quay and shed floor, all under separate schedules, for the Trustees of the Clyde Navigation. The Trustees' Engineer, 16 Robertson Street, Glasgow.

SCOTLAND.—Jan. 6.—For the works to be executed in the construction of new station buildings and relative works at Port Glasgow, for the Caledonian Railway Co. Deposit £2 2s. The Engineer, Buchanan Street Station, Glasgow.

STITHIANS.—Dec. 24.—For erection of a Unionist club-room, for the Unionist Association. Mr. J. A. Richards, monumental mason, Stithians.

TUNSTEAD.—Jan. 8.—For the erection of a school at Tunstead, for the Norfolk Education Committee. Send names and £1 1s. deposit by Dec. 20 to Messrs. Oiley & Haward, architects, 5 Queen Street, Great Yarmouth.

WAKEFIELD.—Dec. 18.—The West Riding Education Committee invite whole tenders for the following works—viz: removal of two temporary buildings from the Barnsley old grammar school to Ferry Fryston and North Elmsall respectively. The Education Architect, County Hall, Wakefield.

WALES.—Dec. 14.—For cement and tile work at Cardiff Workhouse. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

WALES.—Dec. 17.—For erection of laboratories and classrooms at Llandoverly College. Mr. L. L. Banks Price, architect, Doldremlent, Lampeter, or at Llandoverly College.

WALES.—Dec. 17.—For a pair of iron entrance gates for the approach to the Cardiff and Barry Industrial School, Dinas Powis. Tender forms and specifications of work may be obtained from Mr. J. J. Jackson, secretary, Education Offices, City Hall, Cardiff.

WALES.—Dec. 19.—For erection of a lock-keeper's cottage at the eastern end of the Prince of Wales Dock, for the Swansea Harbour Trustees. Mr. A. O. Schenk, M.I.C.E., Harbour Offices, Swansea.

WALES.—Dec. 19.—For erection of an infirmary at Holywell, North Wales. Deposit £3 3s. Messrs. J. H. Davies & Sons, architects, 14 Newgate Street, Chester.

WALES.—Dec. 23.—For erection of an electric theatre at Abercynon, for the Abercynon Palace, Ltd. Deposit £2 2s. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

WALES.—Dec. 23.—For (a) erection of 150 houses, and (b) roads and sewers. Mr. T. M. Williams, City Chambers, Queen Street, Cardiff.

WALES.—Dec. 23.—For erection of six cottages at Ynisawdre, Tondy, for the Garw and Ogmere Gas Co. Mr. P. J. Thomas, architect, Bridgend.

WALES.—Jan. 9.—The Swansea Harbour Trustees invite tenders for the supply, delivery, and erection of: (1) One framed and braced steel double-storeyed extension of the grain shed at the Prince of Wales Dock, with sides and roof covered with galvanised corrugated sheeting; the extension to be 70 feet long by 63 feet wide. (2) Two framed and braced steel single-storeyed extensions of the transit shed at No. 1 Quay, King's Dock, with sides and roofs covered with galvanised corrugated sheeting; the extensions to be 122 feet long by 60 feet wide and 96 feet long by 60 feet wide respectively. Deposit £3 3s. Mr. Talfourd Strick, clerk, Harbour Offices, Swansea.

WALES.—Jan. 11.—For erection of a Council School buildings at Hook, in the parish of Llangwm, for the Pembroke Education Authority. Deposit £1 1s. Mr. O. T. Thomas, Lic.R.I.B.A., County Education Offices, Haverfordwest.

WATFORD.—Dec. 20.—For erecting a vicarage for Christ Church, St. Albans Road. (Mr. H. A. Saul, A.R.I.B.A., 20 Gray's Inn Square, London.) Deposit £1 1s. Messrs. Northcroft, Neighbour & Nicholson, surveyors, 329 High Holborn, London, E.C.

WEDNESBURY.—Dec. 21.—For erection of a county metallurgical and engineering institute, for the Staffordshire Education Committee. The building will comprise metallurgical, engineering, and chemical laboratories, applied mechanics room, lecture rooms, classrooms, &c. Send names and £1 1s. deposit by Dec. 20 to Mr. G. Balfour, director of education, County Education Offices, Stafford.

WELLINGBOROUGH.—Dec. 17.—For the erection of cart shed at the yard, Cannon Street, for the Urban District Council. Mr. E. Y. Harrison, surveyor, Market Square, Wellingborough.

WOODHOUSE.—For the improvement of the ventilation at Woodhouse West Council School by fixing additional hoppers, and for removal and fixing of new heating boiler at the Aughton Council School, for the West Riding County Council (Education Department). Mr. S. Abson, Education Offices, Woodhouse, Yorks.

YORK.—Dec. 16.—For the construction of a shelter in Clarence Gardens, Haxby Road. Deposit £1 1s. Mr. F. W. Spurr, city engineer, Guildhall, York.

TENDERS.

BRADFORD.

For the several trades required in erection of a children's home at Thackley, for the Guardians. Mr. F. HOLLAND, architect to the Board, Bradford.

Provisionally accepted tenders.

North & Sons, Idle, masons	£1,100	0	0
Patrick, Clayton, joiner, &c.	494	0	0
Obank & Sons, Thackley, plumbers	272	0	0
Mitchell, Idle, plasterer	218	15	5
Hill & Nelson, Bradford, slaters	138	0	0
White, Bradford, painter	45	15	6

HENDON.

For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Mr. G. HORN-BLOWER, F.R.I.B.A., 2 Devonshire Terrace, Portland Place, W.

Sabey & Son	£14,545	0	0
Lawrance & Sons	12,950	0	0
Roberts	12,658	10	0
Tennant & Co.	12,211	0	0
Bronsdon & Sons	12,088	13	0
Lowe	11,213	0	0
Perry & Co. (Bow), Ltd.	11,100	0	0
Wheeler	11,000	0	0
Faulks	10,572	0	0
Accock & Co.	10,430	0	0
Hunt & Sons	10,371	0	0
Guttridge & Sons	10,290	0	0
Clarke	10,200	0	0
Dreyer	10,151	0	0
Monk	9,420	0	0
GIBSON & SONS, High Wycombe (accepted)	8,990	0	0

HULL.

For extensions and alterations required at the Power Station, Osborne Street. Mr. A. E. WHITE, M.Inst.C.E., city engineer, Hull.

KETTLEWELL, Hull (accepted) . . . £5,095 0 0

IRELAND.

For rebuilding business premises at Tralee, for Messrs. Galvin. Messrs. DOOLIN & BUTLER, architects, Dublin.

Kennedy	£3,406	8	2
Farmer Bros.	3,041	1	11
Murphy	2,841	5	10
Sisk & Son	2,630	0	0
Meagher & Hayes	2,588	0	0
Ryan & Sons	2,575	0	0
HEARNE & SON, Waterford (accepted)	2,401	1	11

Alternative estimates.

Kennedy	£3,633	5	1
Farmer Bros.	3,214	6	10
Murphy	2,988	1	4
Meagher & Hayes	2,832	0	0
Sisk & Son	2,812	0	0
Ryan & Sons	2,754	0	0
Hearne & Son	2,667	16	4

LONDON.

For the erection of school for physically defective children on the Elthorne Road site, Islington, N., for the London County Council.

W. E. Blake, Ltd.	£5,501	0	0
Symes	5,491	0	0
Lole & Co.	5,475	0	0
McLaughlin & Harvey	5,377	0	0
Roberts & Co., Ltd.	5,377	0	0
L. H. & R. Roberts	5,259	0	0
W. Lawrence & Son	5,234	0	0
Patman & Fotheringham	5,233	0	0
Brand, Pettit & Co.	5,219	0	0
McCormick & Sons	5,197	0	0
Chessum & Sons	5,182	17	6
Lawrance & Sons	5,107	0	0
WILLMOTT & SONS, Hornsey and Hitchin (recommended)	4,950	0	0
Architect's estimate	5,300	0	0

NORTHAMPTON.

For the erection of the Girls' Secondary School.

PULLEN & SONS, Northampton (accepted) £16,655 0 0

MORLEY.

For the various works required in erection of additional premises at Wesley Street Mills, for Messrs. C. Scarth & Sons, Ltd. Mr. T. A. BUTTERY, Lic.R.I.B.A., architect, Morley and Leeds. Quantities by the architect.

Accepted tenders.

W. & H. Sykes, Westfield Road, Morley, masons' work	£900 0 0
Turnbull, Dewsbury Road, Leeds, joiners	690 0 0
T. & J. Horsfield, Dewsbury, ironfounders	362 10 0
Hargreaves, Elland Road, Churwell, plumbers	274 0 0
Rogerson, Bank Top, Morley, slater	210 0 0
J. & S. Rhodes, Mount Top, Birstall, plasterers	43 19 6

For the various works required in the alteration and addition to Victoria Mills, for Messrs. Benn & Webster. Mr. T. A. BUTTERY, Lic.R.I.B.A., architect, Morley and Leeds. Quantities by the architect.

Accepted tenders.

J. Clegg & Sons, Wesley Street, Morley, mason, joiner and plasterer	£890 0 0
Sunderland & Co., Bolton Road, Bradford, patent glaziers	96 1 3
A. W. Clegg, Queen Street, Morley, plumber	84 15 0
John Kellet, Fountain Street, Morley, slater	55 0 0

SCOTLAND.

For the various works required in connection with additions to the Palace Hotel, Grantown-on-Spey. Mr. R. B. PRATT, A.R.I.B.A., architect, Elgin. Quantities by the architect.

Accepted tenders.

D. & A. MacIntosh, Grantown, masons.	
McAndrew & Co., Aberdeen, carpenters.	
J. Ross, Elgin, plumber.	
D. F. Fraser, Grantown, slater.	
L. Paterson, Grantown, plasterer.	
Arch. Macdonald, Forres, painter.	
Redpath, Brown & Co., Edinburgh, steelwork.	
Total	£2,467 0 0
Electric light and bar fittings not contracted for.	

WEST HAM.

For erection of a handicraft centre at Upton Lane school, for the Education Committee.

Maddison	£919 0 0
Quarterman	900 0 0
Webb	899 0 0
Jerram	896 0 0
Clemens	833 10 0
Coxhead	817 0 0
Turnbull & Son	800 0 0
S. Blow, Ltd.	779 19 0
Symes	777 0 0
Barker & Co.	745 0 0
Horswill	737 0 0
J. T. LUTON, Stratford (recommended)	697 0 0

CHRISTMAS, with its holly, mistletoe, and yule log, is essentially the "home holiday" of the year, and in these days of expeditious and comfortable travel the unfavourable weather conditions need not exclude any who may wish to join the family circle at this festive season. We have just received a copy of a most attractive programme issued by the Great Central Railway Company. It is intended for those who are spending their Christmas in the Midlands, Yorkshire, Lancashire, Lincolnshire, or North of England. On Tuesday, December 24, special expresses will leave Marylebone at suitable times for over 500 different stations. The tickets issued at extremely low fares will be available for return on the following Thursday, Saturday, or Tuesday, enabling those who may so desire to spend the special holiday period with their friends. Luncheon or restaurant cars will be attached to the principal trains, and the compartments represent the acme of comfort, being well-lighted and maintained at a genial temperature. Shopkeepers and others whose business may keep them in town until late on Tuesday evening will have the advantage of suitable night trains. Copies of this Christmas holiday programme can be obtained free at Marylebone Station, G.C.R.

REGISTRATION OF PLUMBERS.

A MEETING of London plumbers was held this week at King's College, Strand, when a lecture was delivered by Mr. J. W. Hart, R.P., foreman to Messrs. Dent & Hellyer, of Red Lion Square, on "Modern Sanitary Appliances." The chair was occupied by Mr. H. D. Searles-Wood, F.R.I.B.A., who attended in his capacity of Chairman of the Managing Committee of the General Council for the National Registration of Plumbers, and represented the interest taken by the architectural profession in the registration of plumbers, as a means of distinguishing those who have given satisfactory evidence of their qualification, and are, by the conditions of their enrolment, made individually responsible for the efficiency of their work.

The lecturer described in detail, and illustrated by diagrams and sketches upon the blackboard, the principal points in the construction and objects of the various ancient types of sanitary appliances of which records have been preserved, and those in use at the present day.

The restriction in the use of valve closets in London was referred to in connection with regulations of the Metropolitan Water Board. These are under consideration by the London Council for the National Registration of Plumbers and Plumbers' Company.

The system of "marking" the work of registered plumbers which was adopted by the General Council at their recent conference in Bristol was described, and it was explained that by the system the identity of the master plumbers, or other employers who undertook plumbing work, and also the identity of the operative plumbers who executed it, would be recorded for the greater security of the public and the encouragement of good workmanship.

The following is a description of the mark: A copper label has embossed on it on the right-hand side in the space at the top the mark of the employers (an alphabetical letter or other sign), to distinguish each of their jobs whereon the system of marking is adopted. The number of each of the registered operative plumbers who executes the work appears in the space on the left side of the label. The words "Registered Plumbers' Work" appear below these marks.

The copper labels should be sweated on the pipes to distinguish the piece of work of each man, and the labels should be attached, where practicable, on the bench.

SUMMER SCHOOL OF TOWN PLANNING.

IN view of the success of the first Summer School of Town Planning held at the Hampstead Garden Suburb in August last, under the auspices of the University of London, it has been decided to hold a second Summer School next year at the same centre. It will last for a fortnight, commencing August 2, and continuing till August 16, and during that time lectures and demonstrations on town planning and subjects practically connected therewith will be given by some of the leading authorities. Last summer certificates were awarded to the students by the Extension Board of the London University, and a number of architects and engineers have already found these certificates of great advantage. Next year it is hoped that with the experience of the first Summer School the course will even be an improvement upon last year's. The Hampstead Garden Suburb, the 400 acres extension of which forms a great portion of the town planning scheme recently submitted to the Local Government Board by the Finchley District Council, makes an ideal centre for a study of this kind. The practical difficulties which town planners have to overcome can here be studied on the site as they actually occur, and the lectures are rendered of considerably more value by constant illustration of outdoor practice. The school will, as before, be specially adapted to the needs of municipal engineers, architects, and surveyors.

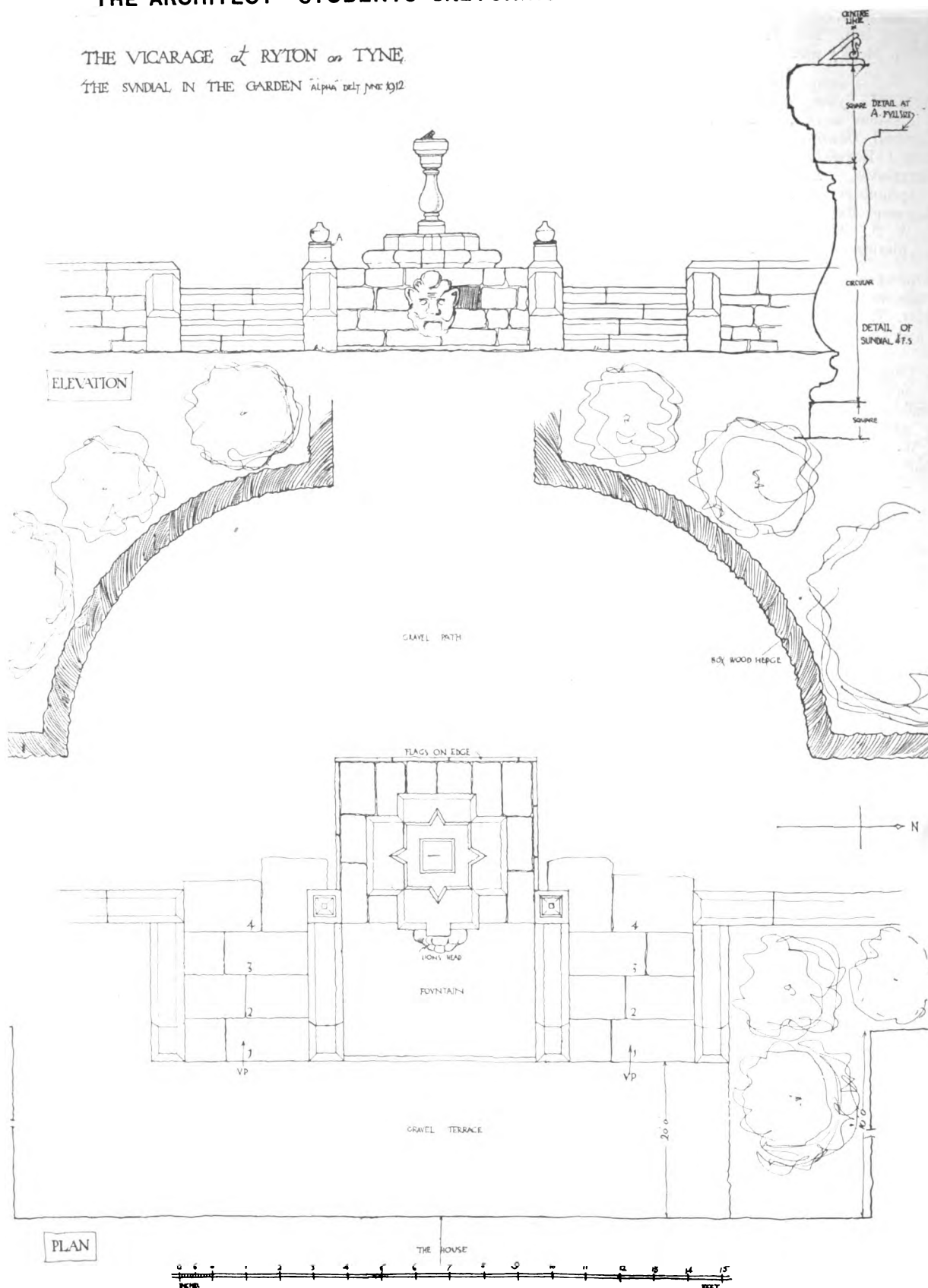
Particulars can be obtained upon application to the Hon. Secretary of the Summer School, Mr. J. S. Rathbone, The Institute, Hampstead Garden Suburb, London, N.W.

THE sole selling rights for Great Britain and Ireland for "Castor," the well-known preparation for rendering cement plastering waterproof, have been transferred to the "Castor" Waterproofing Co., 110 Fenchurch Street, London, E.C.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

THE VICARAGE at RYTON on TYNE.

THE SUNDIAL IN THE GARDEN "ALPHA" July 1912



From a Drawing by "ALPHA."

We are informed that the style of the firm of Mr. John Tann, 117 Newgate Street, London, E.C., has been altered to John Tann, Ltd. The works remain at St. Stephen's Road, Old Ford, E.

THE Berwick Town Council as the Sanitary Authority for the borough, have received the sanction of the Local Board to borrow £21,800 for the purpose of carrying out the joint water scheme for the three parts of the borough—Berwick, Tweedmouth, and Spittal.

THE Wimbledon Corporation have agreed to purchase the Wimbledon Park Estate, with its lake and lands adjoining, for the purpose of a public open space, at a cost of £65,000. Property owners in the vicinity will contribute towards the purchase money.

A Local Government Board inquiry was held at Stockport on Tuesday into an application by the Corporation for sanction to a loan of £15,000 required to extend the police buildings. The present scheme is the third to be prepared.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



*The vicarage Ryton
The Sundial in the
Garden & May 1912
ALPHA DELT*

From a Drawing by "ALPHA"

NEW CHIMES FOR CANADA.

MR. ROBERT WARNER, who has just returned from Canada after a journey of over nine thousand miles, informs us that Messrs. John Warner & Sons, of the Spitalfields Foundry, London, have been entrusted with the work of the installation of a chime of 13 bells for Fredericton Cathedral, New Brunswick, Canada. The chime will cost £2,000, which is based upon a 40-cwt. tenor, and the total weight will be about 9 tons.

The installation of another chime at Winnipeg, Ontario, has also been entrusted to Messrs. John Warner & Sons. Winnipeg is the most important city in Western Canada.

The chime will be composed of 15 bells, with a total weight of about 12 tons, and based upon a 50-cwt. tenor. The bells, which will cost nearly £2,500, are being given to the church by a lady in memory of her husband and son, who perished in the sinking of the *Titanic*.

THE L.C.C. Main Drainage Committee recommend the expenditure of £1,000 on the necessary preliminary work and the preparation of plans, &c., for a proposed enlargement of North Woolwich pumping station, at an approximate total cost of £51,000.

**BUILDING PROGRESS IN THE PROVINCES
AND SUBURBS.**

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.**CHESHIRE.**

Ellesmere Port.—Cemetery Chapel (£850).
Wilmslow.—Catholic Church (£3,000 to £4,000).

DERBYSHIRE.

Alvaston.—Council Offices.
Burton.—Church, Dale Road.
Creswell.—St. Mary Magdalene Church: enlargement by 300 places (£1,300).
Derby.—Elementary Council School for 800 places, Nightingale Road.
Long Eaton.—Four elementary schools off Station Road, for 1,200 places (£14,400).

DEVON.

Feniton.—The E.C. Schools: additions and alterations. Mr. A. J. Redfern (of Honiton), architect.

DORSET.

Poole.—Baptist Church, Hill Street: additions and alterations.
Chauffeur's Cottage, "St. Ann's," Canford Cliffs. Mr. R. W. Schultz (of London), architect.
House, Wimborne Avenue, for Mr. E. V. Wilson.
House, Cliff Drive, for Mr. S. Ward.
House, Cliff Drive, for Mr. R. Young.
House, Caledon Road, for Mr. G. H. Isaacs.
House, Danecourt Road. Mr. H. Kendall, architect.
House, Lyell Road, for Mr. H. Harding.
House, Marlborough Road, for Mr. H. Knight.

DURHAM.

West Hartlepool.—Swimming Bath.
Wheatley Hill.—Council School: alterations and improvements. Mr. N. Richley (of Durham), architect.

ESSEX.

Dunmow.—Police Station: extension.
Harwich.—Police Station (£6,000 to £7,000). County architect.

HAMPSHIRE.

Portsmouth.—Forty-three model dwellings, Portsea.

KENT.

Ramsgate.—Council School, Ellington Place. Mr. G. G. Tucker, architect.

LANCASHIRE.

Bacup.—Baptist Sunday School for 500 places. Messrs. Smith & Cross (of Rochdale) and Mr. F. P. Halsall, A.R.I.B.A. (of Southport), joint architects.
Bolton.—House, "The Clough," Chorley New Road, for Mr. A. T. Crook.
Six houses, Chorley Old Road, for Mr. A. England.
Six houses, Chorley Old Road, for Mr. J. Hardman.
House, Church Road, for Mr. R. McConnell.
House, Junction Road, for Mr. A. Thompson.
School for the Blind, off Marsden Road (£5,000).
Brightmet.—Six houses, Bury Road, for Mr. T. Woods.
Manchester.—Henry Watson Library, Piccadilly: extension (£500).
Rochdale.—Infirmary: additions and alterations. Messrs. Jesse Horsfall (F.R.I.B.A.) & Healey (of Manchester), architects.
Southport.—Picture palace, Nevill Street, for Mr. J. Baker.
Picture palace, Nevill Street, for Mr. B. Hanmer.
Picture palace, Walton Road, Birkdale, for Mr. A. Wade.

LEICESTERSHIRE.

Blaby.—Glen Parva brickworks: additions and alterations for an Oil and Meat Syndicate.

LINCOLNSHIRE.

Lincoln.—Two houses, Scorer Street, for the Lincoln Land and Building Society.
Eighty-three houses, Westcliff Street. Mr. J. M. Harrison, builder.
Vicarage, Newport, for the Rev. Canon Leeke.

MIDDLESEX.

Hendon.—(King Edward VII.) Memorial Cottage Hospital, Park Road.
Southall.—Elementary Council School.
Sunbury-on-Thames.—Public Elementary school: enlargement by 100 places.

MONMOUTHSHIRE.

Abersychan.—Council School, Pentwyn, for 500 places. Mr. J. A. Bain, F.R.I.B.A. (of Newport), County architect; also
Blackwood.—Council School, Libanus, for 600 places.

NORTHAMPTONSHIRE.

Northampton.—Fifty workmen's dwellings, Bective Estate, Kingsthorpe (£9,000). Mr. J. W. Gossage, contractor.

NOTTINGHAMSHIRE.

Mansfield.—Hospital (King Edward VII.) Memorial Wing.
Selston.—Council School.

SOMERSET.

Frome.—Infantry Drill Hall. Mr. W. J. Willcox (of Bath), County surveyor.
Taunton.—Twelve houses, String Lane. Mr. D. Edwards, A.M.I.C.E., Borough surveyor.

STAFFORDSHIRE.

Stafford.—Twenty (or more) houses for the working classes.
Stoke-on-Trent.—Church at Hartshill, Basildon (£5,000). Church Schools, Fenton (£5,000).
Council School, Oakhill.
Children's Hospital and Nurses' Home extension (£6,000).

SUFFOLK.

Ipswich.—Offices for the Sun (Fire) Insurance Co., Ltd. Mr. E. T. Johns, architect.

SURREY.

Byfleet, West.—Public Elementary School for 350 places.
Chertsey.—Sir William Perkins' School. Messrs. Jarvis (A.R.I.B.A.) & Richards (of London), architects.
Farnham.—Seven pairs of cottages, Weydon Hill Road, for the U.D.C. (£3,100).
Guildford.—Extension of premises, High Street, for Messrs. John Reeks.
Molesey.—Hotel, Theatre, Concert Room, &c., Tagg's Island. Mr. F. Matcham (of London), architect.
Reigate.—Police and Fire Station, London Road.

SUSSEX.

Lewes.—Sanatorium (£20,000). Mr. F. J. Wood, A.M.I.C.E., County surveyor.

WORCESTERSHIRE.

Rubery.—Pumping station
Stourport.—Electric theatre. Messrs. Pritchard & Pritchard (of Kidderminster), architects.
Worcester.—Council School, Skating Rink (Arboretum) site.

YORKSHIRE.

Alne.—(Supplementary to November 22.)—Wesleyan Sunday School. Mr. J. F. Todd (of Easingwold), architect.
Messrs. J. Allinson & Son (of Pocklington), contractors (£500).
Brighouse.—St. John's Church, Rastrick. Sir Charles Nicholson, Bart., F.R.I.B.A. (of London), architect.
Dewsbury.—Alterations in Bond and Grove Streets, for the Dewsbury and District Junior Unionist Association. Mr. W. F. Cave (of Heckmondwike), architect.
Sandsend.—Two villas, for Mr. T. Trattles.
Whitby.—Raithwaite Hall: wing for Mr. W. H. S. Pyman.
Garage for Mr. Walker, near the Royal Hotel Farm.

WALES.

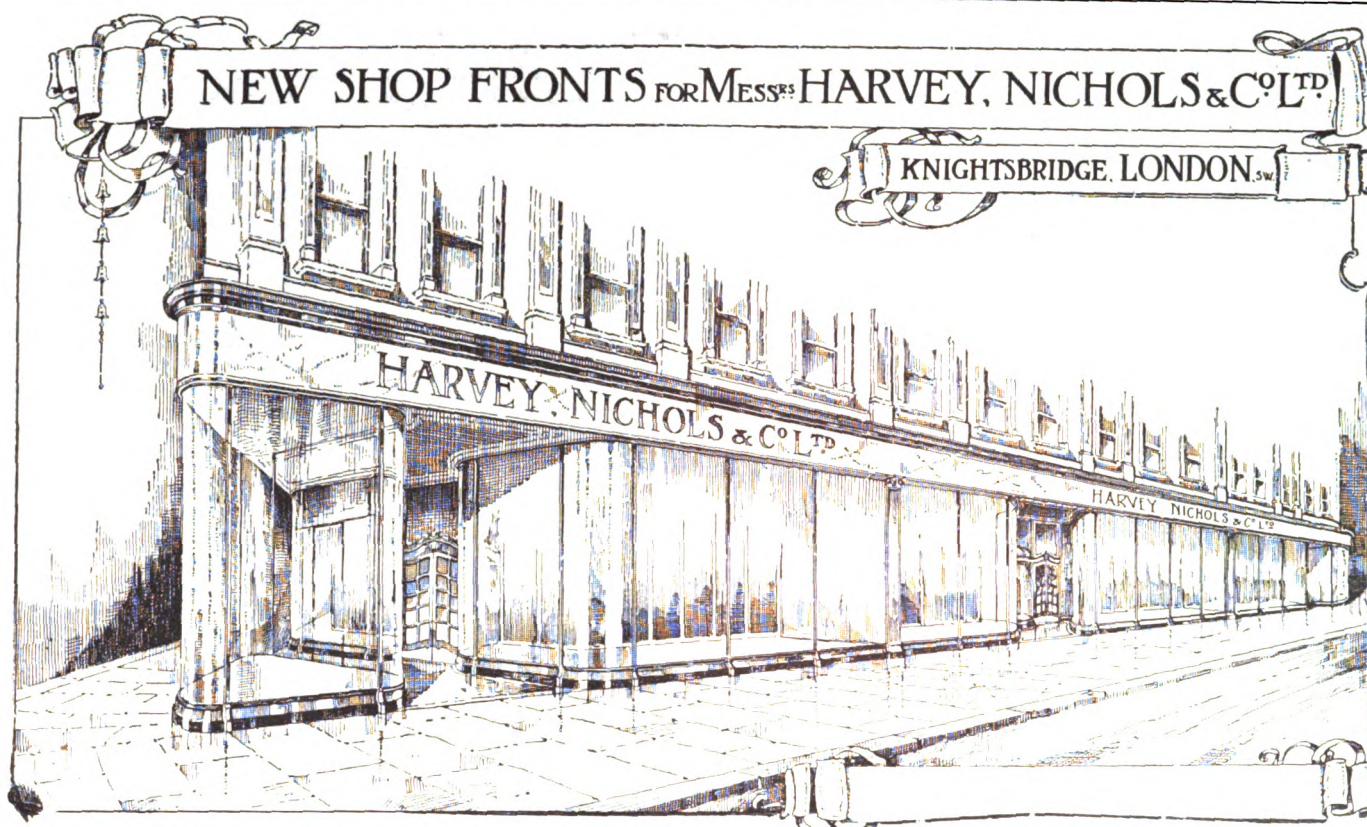
Glyn Neath.—Cinematograph Theatre. Mr. M. H. Hunter (of Neath), architect.
Llanelli.—Public Hall.
Morriston.—Cinema Hall, Swan Road, for Messrs. Hopkins, Samuels & Co.
Swansea.—Cinema Hall, Worcester Place, for Messrs. A. Andrews & Son.

SCOTLAND.

Airdrie.—Police Station, Clarkston (£850).
Alyth.—Masonic buildings. Separate trade contractors.
Coatbridge.—School, Drumpellier Street and Bank Street corner, for 750 places (£7,000).
Edinburgh.—Cinematograph Theatre, Baxter's Place, Greenside (for 900 sittings).
Motherwell.—Public slaughterhouse: improvements (£1,000).
Paisley.—Seedhill Finishing Co.'s Cloth Works.
Rutherglen.—Works: additions for River, Bolt and Nut Co.

IRELAND.

Kells.—Town Hall (£1,000). Mr. Grace, architect.
Longford.—St. Mel's College: library and gymnasium. Mr. T. F. Macnamara (of Dublin), architect.



MESSRS. HARVEY, NICHOLS & CO., LTD., have recently rearranged their premises, including the reconstruction of the whole of their shop windows fronting to Knightsbridge, with returns in Seville Street and Sloane Street. Their old-fashioned and rather low sashes, with two irregular and awkward entrances, have given place to the new windows, very much higher than the old ones, formed of ornamental bronze mouldings and gunmetal ornaments with green marble fascia and plinth, the whole being a happy combination of commercial utility and artistic taste.

There is at either end of the new windows a large island window, with an entrance doorway in the angle at the back of same, whilst in the centre shaped windows lead into

two sets of folding doors, which are separated by a circular glass case with a domed glass roof, the whole forming an imposing and attractive feature. The total length of the new windows is about 350 ft. run. Inside the windows, at a distance of 7 ft., is a mahogany screen, glazed at top with fire-resisting copper glazing.

The new shop-front has been made and erected by Messrs. Harris & Sheldon, Ltd., of Birmingham, and 70 Wood Street, London, the shop-fitters, who are also responsible for a large quantity of new mahogany fittings and mahogany, bronzed and plate-glass counters. The work has been designed and carried out under the entire supervision of Mr. F. E. Williams, A.R.I.B.A.

PATENT SPECIFICATIONS PUBLISHED DECEMBER 5, 1912.

Selected by James D. Roots, M.I. Mech.E., Thanet House Temple Bar, London.

No. 24,707. Nov. 7, 1911.—John Gunning, 100 Holden-hurst Road, Bournemouth. Apparatus for lighting and extinguishing lights at predetermined times.

24,936. Nov. 9, 1911.—Myer Coplans, 8 Ashwood Villas, Headingley, Leeds. Apparatus for purifying water or other liquids.

25,031. Nov. 10, 1911.—A. J. Caldwell, 92 Lower Bridge Street, Chester. Fire and temperature alarm.

25,287. Nov. 14, 1911.—John Todd, 20 Dumbarton Street, Liverpool. Construction of chimney pots, chimney cowls and ventilating terminals.

29,168. Dec. 28, 1911.—John Shanks, Tubal Works, Barrhead, Renfrew. Ball cocks.

813. Jan. 10, 1912.—J. C. Hamilton, Sutton, Ferrybridge, Yorkshire, and T. W. Wheatley, of Brotherton, Ferrybridge, Yorkshire. Apparatus for filtering, cleansing, and purifying water, &c.

1,556. Jan. 19, 1912.—J. Erskine-Murray, 34 Norfolk Street, W.C., and F. R. Trevithick, King's Road, Mount Eden, Auckland, N.Z. Apparatus for measuring angles.

4,658. Feb. 24, 1912.—J. M. Goodrich, "Ashleigh," Woodthorpe, Nottingham. Revolving oven shelf.

5,541. March 5, 1912.—Moritz Schitzkowsky, 53 Colnerstr., Dusseldorf, Germany. Process for the manufacture of collars or other thickened portions of pipes and similar hollow bodies.

8,488. April 10, 1912.—Date claimed under International Convention. Otto Rehnitz, 1 Kaiserstr., Cottbus, Germany. Lathing or plaster supports capable of being rolled up, and in the process for their manufacture.

9,114. April 18, 1912.—Oswin Hansom, 16 Tithebarn Street, Liverpool. Water heating apparatus.

13,789. June 12, 1912.—Date claimed under International Convention June 17, 1911. J. Ravaisson-Mollien, 61 Rue d'Auteuil, Paris. Flushing mechanism for water cisterns.

13,926. June 15, 1912.—Anton Gasparich, West Oakland, Alameda, California, U.S. Flexible rollers for drawing curves.

17,497. July 27, 1912.—H. D. Hope, 55 Lionel Street, Birmingham. Closing windows and the like and devices therefor.

10,038. April 27, 1912.—Arthur Haywood, Gabbary Works, Egyptian State Railways, Alexandria, Egypt. Window fastener.

10,088. April 29, 1912.—Joseph Southall, Worcester Foundry, Worcester. Fall-bars for cooking ranges.

10,141. April 29, 1912.—J. McCulloch Ross, Lucan, Middlesex, Ontario. Means for completing and economising the combustion of fuel in stoves.

11,332. May 13, 1912.—P. L. Bryning, 26 Linden Place, Brookline, Norfolk, Mass., and E. L. Brown, 17 King Street, Lynn, Mass. Sectional shelving.

12,153. May 22, 1912.—Date claimed under International Convention May 26, 1911. F. Vereycken, 19 rue du Couloir, Brussels. Flushing cisterns.

DUNFERMLINE TOWN Council, at their monthly meeting on Monday, had before them an application to erect 70 dwelling-houses on a site in the area proposed to be town-planned by the burgh. The convener of the Town-Planning Committee moved that the plans be held over until the Local Board had sanctioned the Council's final plan for the laying out of the ground. He said that if the Council granted authority they might be held liable for compensation in the event of the buildings not conforming to the town-planning scheme as approved by the Board. The Council, in consequence, postponed consideration of the plans until March or April.

EFFECTS OF TOWN AIR ON METALS.*

EVERYONE has noticed the more prominent of these effects in the occurrence of tarnishing and disfigurement, but a third more deep-seated one, often of greater importance—namely, corrosion—frequently escapes observation. The phenomena are partly mechanical and partly chemical, and their causes may be classified as follows, noting that they will, in a large number of cases, act conjointly. The order is taken in time-sequence, as they usually come into operation.

1. Direct action on the metallic surface of certain gaseous impurities in the air.
2. Deposit of a carbon layer from the soot.
3. A greasy coating from hydrocarbons which attracts dust.
4. A corrosive film from acid vapours.

The second and third, or mechanical causes, greatly obscure and disfigure a bright metallic surface, but do not of themselves corrode it; in fact, a hydrocarbon layer would, as is well known, actually form a protection, if it were uniform. But, unfortunately, it is not, and only gathers in drops and smears, and the metal becomes, in consequence, mottled and unevenly affected. Simple soot due to almost pure carbon is easily detachable, and it is only when the brown adhesive hydrocarbon soot is present that it is more difficult to clean. On the other hand, the deposition of the combined carbonaceous coating involves an immense amount of labour in removal, the tarry matters derived from the imperfect combustion of coal being the main difficulty. The remedy for the evil is obviously the prevention of smoke by a complete and economic combustion in grates and furnaces. This will be reverted to later.

In reference to the first cause given, the direct action on metallic surfaces of gaseous impurities, there are districts in manufacturing towns (including London) where hydrochloric acid, spray, or dust from various chemicals, ammonia or sulphuretted hydrogen are emitted from the works. But away from these, the last-named gas is continually occurring in towns, derived from the incomplete combustion of coal in domestic grates, sewers and putrefaction, emanations from human beings, or accidental leakage of unpurified coal gas accounting for smaller quantities. It is hardly necessary to mention the tarnishing and blackening effect on nearly all metals.

Sulphuretted hydrogen requires special attention as the only ordinary gas which attacks silver, and, apart from the expense of continually cleaning with whitening or other polishing agent, there is a constant loss of the precious metal in the removal of the film of silver sulphide, a loss that might be calculated from the gradual thinning and reduction of weight of silver articles in time, and would amount to a very serious aggregate. In silversmiths' shops it is avoided, at another expense, by encasing the window, but when taken out and exposed to town air the articles rapidly tarnish.

Aluminium is unaffected by sulphuretted hydrogen itself, but, on the other hand, is susceptible to chloride vapours, to many acids, and to alkalis which may be used for cleaning. In spite of its valuable qualities for domestic application, it is not invulnerable against town air.

Copper and brass are particularly sensitive to attack by sulphuretted hydrogen. A familiar example is the rapid darkening of copper or bronze coinage, the coating being mainly sulphide. Although the cause may be mainly due to human exhalations, there is no doubt that copper or brass surfaces remain bright longer in the country than in towns, and this has a special interest to tradesmen on account of the collectively immense area of brass exposed on shop name-plates, which require with constant labour to be kept immaculate.

Ammonia, also present in small quantity in the air of towns, can also attack copper or brass, and with the aid of atmospheric acids can form the green or blue incrustations which are commonly called "verdigris."

These actions are intensified generally or locally if the active impurities are condensed by soot, or brought down by rain; and not simply tarnishing of the surface, but actual corrosion of the body of the metal, may be occasioned. Some analyses of London soot collected from glass roofs in dry weather gave in percentage averages: Carbon, 39 to 43; hydrocarbons, 5 to 14; sulphuric acid, 4; hydrochloric acid and ammonia, each about 1; the rest being mineral matter containing oxide of iron, with some moisture. There is not sufficient ammonia to neutralise the sulphuric and hydrochloric radicles, therefore such soot is acid in reaction.

* A Paper by Dr. S. Rideal, D.Sc., F.I.C., prepared for presentation to the International Smoke Abatement Conference at the Agricultural Hall, London, N

Samples of soot in Glasgow have contained as much as 7.9 per cent. of SO_2 . In the elaborate and valuable research under the auspices of the Coal Smoke Abatement Society, reported in the *Lancet* of January 6, 1912, under the title of "The Sootfall of London," observations are published for the year from June 1910 to June 1911, made at three stations in London and one on the borders of the metropolitan area at Sutton, Surrey. They show that the deposit is greater in the City area, amounting to about 650 tons per square mile, that in the south-western district it was 460 tons, and at Sutton 195 tons, the maximum fall being generally in the late autumn, the period of fogs. In the S.W. district the insoluble deposit, mainly soot, was less, on the whole, than that which fell in the City, and in the suburban area typified by Sutton it was only about one-sixth of that in the metropolis. The soluble matters deposited included ammonium and calcium salts, sulphates and chlorides, and some organic constituents, among which acetic acid was certain to have occurred; the quantity of soluble matter in the suburban district was again less. Particular attention is drawn to the sulphate figures, "inasmuch as most, if not all, of the sulphur found in rain may be traced to the combustion of coal or gas." The City area receives nearly double as much sulphate as the S.W. district, while in the suburban area there was often only a trace, and sometimes none. Ammonia is a product of the faulty combustion of coal; coal gas is free from ammonia, and yields none on burning. The amount in the S.W. district is three-fourths and that at Sutton one-twentieth of that in the City. It is stated that rain in the metropolis is rarely acid, in spite of its load of impurities, while in Leeds, Glasgow, and Manchester acidity is constantly reported. This is attributed to the comparatively less development of factories in London as a whole, and also to the fact that domestic fires tend to make the smoke alkaline from ammoniacal tarry compounds.

(To be concluded.)

VARIETIES.

THE Lincoln Board of Guardians on Tuesday agreed to purchase nine acres of land near the barracks as a site for a workhouse which it is proposed to erect at a cost of £20,000.

THE Bromsgrove Board of Guardians have appointed a committee to report upon the question of building upon the workhouse land, with instructions to engage an architect to prepare plans and estimate.

MR. H. W. PEARCE, who has been assistant borough surveyor at Worthing for some four years, has been appointed surveyor to the Urban District Council of Swanage. As a parting gift the Corporation staff have presented Mr. Pearce with a gold watch.

THE Smethwick Education Committee have this week approved the plans of the proposed Smethwick Halls Schools. The buildings are laid out on the one-storey plan, and, in addition to the ordinary school premises, there are a manual training centre to accommodate 40 boys, a private room for the assistant school medical officer, a room in which medical inspections can be carried out, and a room which can be utilised later as a school clinic. The suggested open-air school was abandoned as being too costly.

THE Asylums Committee of the London County Council recommend that the erection of the Maudsley Hospital at Denmark Hill should be proceeded with, subject to the approval of the necessary plans by the Secretary of State. The final estimate of the cost of the buildings by the asylums engineer is £48,000 for 108 beds, or £444 8s. 10d. per bed. The additional cost of equipment is estimated at £8,000.

It was stated at the last meeting of the Whitley Urban Council that the harbour improvement engineers, Messrs. Sandeman & Sons, of Newcastle, had been instructed to prepare plans for additional fish quays, in connection with the harbour improvement works, which are being carried out by Messrs. W. Hill & Co., London, at a cost of about £60,000. The Council has power to expend £75,000, including a Treasury grant of £24,400.

THE tender of Messrs. Quibell, Sons & Co., Ltd., Hull, amounting to about £33,000, has been accepted for the erection of the "Dr. Lee Rest Homes" at Hull. They will be built on the Anlaby Road, and will provide accommodation for seventy-five single persons and forty married persons. The architect for the scheme is Mr. H. T. Hare, F.R.I.B.A. Dr. Lee, who died in January last, left £195,246, which, with the exception of £11,000, will be devoted to founding the Rest Homes.

THE Architect and Contract Reporter.

FRIDAY, DECEMBER 20, 1912.

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AGENTS FOR AMERICA.

The International News Co., 5 Bream's Buildings, Chancery Lane, London, England, and New York.

AGENTS FOR CANADA.

Messrs. WM. DAWSON & SONS, Ltd., 91 Church Street, Toronto, to whom all correspondence for Subscription and Advertising Rates should be made.
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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

CHRISTMAS HOLIDAYS.

All alterations or fresh copy for advertisements for the next issue must reach us by Monday morning next, the 23rd inst.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

HEMEL HEMPSTED.—Jan. 31.—The Town Council invite competitive designs for a housing scheme comprising 25 houses. Premium offered £20. Printed conditions and plan of site may be obtained on payment of £1 1s. deposit, which will be returned on receipt of bona fide designs on or before January 31. Send application to the Borough Surveyor, Town Hall, Hemel Hempstead.

(Continued on page 7.)

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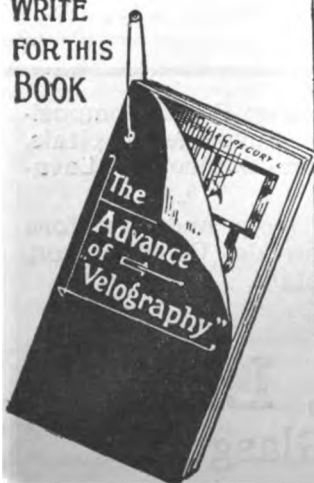
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HAYTI.—Feb. 4.—The Acting Consul-General at Port-au-Prince reports the announcement in the *Moniteur* of a competition of designs for a national palace at Port-au-Prince. Plans will be received by the "Département des Travaux Publiques," Port-au-Prince, up to Feb. 4, and prizes of \$500 (about £103), \$250, and \$200 will be awarded. The building and furnishing of the new palace, is expected to cost about £80,000. The *Moniteur*, containing further particulars, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

JAMAICA.—Jan. 31.—The Mayor and Council of Kingston offer a prize of £100 for a design for municipal buildings (suitable for construction in reinforced concrete) to cost not more than £9,000. Charge 2s. For information apply to Messrs. Alexander Young (London), Ltd., 60 Fenchurch Street, London, E.C.

LANCING.—Sketch plans are invited for church accommodating 500 people, to be erected in South Lancing, to cost, when completed, from £4,000 to £5,000. Communications to be sent to the Secretary of Building Committee, Rev. E. Peel, Lancing Vicarage, Worthing.

NEWCASTLE-UPON-TYNE.—The Education Committee invite from architects practising in Newcastle competitive plans for elementary schools at (a) Rye Hill, and (b) Crudas Park. Apply to the Secretary, Education Offices, Northumberland Road, Newcastle-upon-Tyne.

WELLINGTON (SALOP).—The Urban District Council invite competitive designs for houses to be let at 3s. to 3s. 6d. a week. A prize of £10 10s. will be given for the design most approved by the Council, and the plans for which such prize is awarded shall become their absolute property. No undertaking is given or to be implied that the architect submitting such plans will be employed to carry out the work, or that the scheme or design will be carried out. Mr. J. W. Littlewood, Clerk, Bank Chambers, Wellington, Salop.

CONTRACTS OPEN.

ALTRINCHAM.—Dec. 30.—For erection of shelter and conveniences at the recreation ground, Broadheath, in accordance with revised plans. Mr. H. E. Brown, surveyor, Town Hall, Altrincham.

ARNSIDE.—Dec. 23.—For new aisle and vestries and extension of nave at Arnside Church. (Messrs. Austin & Paley, architects, Lancaster.) Messrs. Wright & Son, quantity surveyors, Lancaster.

BECKENHAM.—Jan. 13.—For the following, for the Urban District Council—viz.: (1) Supply and erection at Kelsey Park, Beckenham, of two rustic thatched shelters, about 32 feet by 16 feet each; (2) supply of some 180 rods of rustic fencing, 3 feet high; and (3) the erection of a greenhouse, 20 feet by 10 feet. Deposit £1. Mr. J. A. Angell, surveyor, Beckenham.

BOOTLE.—Jan. 3.—For alterations and additions to the Territorial quarters of the 7th Battalion the King's (Liverpool Regiment), in Park Street, for the West Lancashire Territorial Force Association. Deposit £1 1s. Mr. H. L. Beckwith, architect, Bank Chambers, 3 Cook Street, Liverpool.

BRADFORD.—For the several works required in erection of raised seating with reinforced concrete supports in Lister Park. Messrs. B. D. Fairbank & Son, architects, 1 Bank Street, Bradford.

BRAWBY.—Dec. 21.—For erection of two cottages and one set of farm buildings at Barrows House Farm, Brawby, near Malton. The Land Steward, Small Holdings Department, County Hall, Northallerton.

BRISTOL.—Dec. 23.—For erection of Bristol, North, new sorting office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. F. A. Huntley, H.M. Office of Works, Small Street, Bristol, and H.M. Office of Works, &c., Storey's Gate, S.W.

BROCKENHURST.—Dec. 30.—For the reconstruction of the superstructure of Brockenhurst Bridge, consisting of two 20 ft. spans of steel decking, for the Hampshire County Council. Deposit £2 2s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

BUNTINGFORD.—Jan. 8.—For the construction of a precipitation tank at the sewage disposal works. Mr. E. G. Thody, surveyor, Rural District Board Room, Buntingford.

CHATHAM.—Jan. 4.—For erection of an elementary school at Ordnance Street, for the Education Committee. Send applications and £2 2s. deposit by Jan. 4 to Mr. G. F. Bond, architect, High Street, Rochester.

CHILDSWICKHAM.—Jan. 17.—For altering and extending Childswickham Council School, near Broadway, Glos. Send names and £2 2s. deposit by Dec. 17. Mr. R. S. Phillips, architect, Shire Hall, Gloucester.

CHORLTON-CUM-HARDY.—Jan. 8.—For reinforced concrete work at the Carnegie library, Chorlton-cum-Hardy, near Manchester, as follows: Dome, 28 feet, octagon; roof, flat, 400 super yards; floor, 145 super yards, for the Libraries Committee. Deposit £1 1s. The City Architect, Town Hall, Manchester.

COTTERED.—Jan. 8.—For the repair of the public draw well upon the green at Cottered, near Buntingford, for the Cottered Parish Council. Mr. E. G. Thody, surveyor, Buntingford.

COTTINGHAM.—Jan. 1.—For alterations and additions to the Council School, for the East Riding of Yorkshire County Council. Deposit £1 1s. Apply at the School and the Building Surveyor, County Hall, Beverley.

EAST HAM.—Jan. 21.—For erection of Brampton Road school to accommodate 1,491 scholars. Send application by Dec. 31 to Mr. R. L. Curtis, architect to the Education Committee, 11-12 Finsbury Square, London, E.C.

EXETER.—Dec. 23.—For the extension of the isolation hospital, Whipton, near Exeter, for the Corporation. Deposit £1 1s. Mr. T. Moulding, M.I.C.E., city engineer and surveyor, 7 Southernhay West, Exeter.

FOWEY.—Jan. 6.—For erection of cottage hospital, Fowey. Deposit £2 2s. Mr. C. W. Parkes Lees, architect, Porthpean House, Lanteglos-by-Fowey.

HUNMANBY.—Jan. 1.—For erection of a teacher's house at the Council School, for the East Riding of Yorkshire County Council. Apply at the School and the Building Surveyor, County Hall, Beverley.

IRELAND.—Jan. 2.—For additions and alterations to St. Agnes' Hospital workhouse, Cork. Mr. J. Cotter, clerk, Board Room, Cork.

IRELAND.—Jan. 13.—For erection of two houses at Markethill station, Armagh, for the Great Northern Railway Co. (Ireland). Deposit £1 1s. The Engineer's Offices, Dublin and Belfast.

IRELAND.—Jan. 15.—For the building of thirty labourers' and fourteen artisans' cottages at Workhouse Road, Ballina, for the Urban Council, together with boundary walls, sewers, roads, &c. Charge 5s. Mr. J. S. Cairns, C.E., architect, Ballina.

LANCASTER.—Dec. 23.—For additions, &c., to the drill hall, Phoenix Street, for the 5th Battalion King's Own R.L. Regiment. (Messrs. Austin & Paley, architects, Lancaster.) Messrs. Wright & Son, surveyors, Lancaster.

LEEDS.—For the separate trades in connection with erection of a small one-storey factory and alteration to existing premises in Camp Road. Mosley's Estate Agents, 6 Wormald Row, Leeds.

LIVERPOOL.—Dec. 23.—For erection of Canada Dock (Liverpool) Labour Exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. The Central Clearing House, Harbour Master's House, George's Dock Passage, Liverpool, and H.M. Office of Works, &c., Storey's Gate, S.W.

LONDON.—Jan. 2.—For erection of additional bedrooms for officers over the east wing of the front central block at their infirmary, Dartmouth Park Hill, N., for the St. Pancras Borough Council. Deposit £5. Mr. J. E. P. Hall, clerk, Town Hall, Pancras Road, N.W.

LONDON.—Jan. 9.—For certain sanitary works, &c., at the St. George's Workhouse, Mint Street, S.E., for the Guardians of the Southwark Union. Deposit £5. Mr. A. Saxon Snell, F.R.I.B.A., architect, 9 Bentinck Street, Manchester Square, W.

MANSFIELD.—For erection of business premises, Leeming Street. Mr. W. C. Jackson, M.S.A., architect and surveyor, 6 Stephenson Place, Chesterfield.

NAFFERTON.—Jan. 1.—For the erection of a Council School for 136 children, for the East Riding of Yorkshire County Council. Deposit £1 1s. The Building Surveyor, County Hall, Beverley.

OSSETT.—Dec. 23.—For the mason, bricklayer, carpenter and joiner, and slater work required in the erection of fire engine house, storekeeper's house, and stores at the depot, Illingworth Street, for the Corporation. Mr. H. Holmes, M.I.C.E.I., borough engineer, Town Hall, Ossett, Yorks.

PORTSMOUTH.—Dec. 23.—For the following works, for the Education Committee—viz.: (1) Reslating roofs of Francis Avenue Council School (boys' and girls' departments); (2) repairs and alterations to No. 3 Toronto Road, Buckland;

(3) pulling down four houses, Nos. 5 and 7 and 17 and 19 Balliol Road, Buckland, and making good side walls of adjoining houses, and purchasing and removing old material. Mr. A. H. Bone, surveyor, Cambridge Junction, Portsmouth.

PRESCOT.—Dec. 23.—For the carrying out of certain work of repair, decorating, &c., at 40 Market Place. Mr. H. Cross, solicitor, Prescott.

PRESTWICH.—Dec. 23.—For erection of buildings and walls in connection with the extensions of the Council's town's yard and stables. Deposit £1 1s. Mr. S. H. Morgan, A.M.I.C.E., surveyor, Council Offices, Prestwich, near Manchester.

ST. HELENS.—Dec. 27.—For the plumbing, painting, and glazing in connection with the erection of the Liverpool Road Council School. Deposit £1 1s. Messrs. Biram & Fletcher, architects, George Street, St. Helens, Lancs.

SCOTLAND.—For levelling and forming playing fields, including cricket pitch and tennis courts, mason work of boundary walls, iron gates and railings, &c., at Mayfield Hostel, Dundee, for the St. Andrews Provincial Committee. Mr. T. M. Cappon, architect, 32 Bank Street, Dundee.

SCOTLAND.—For joiner, plumber, slater, plaster, asphalt, glazier, and tile works in new training college and college school, Dundee, for the St. Andrews Provincial Committee. Mr. T. M. Cappon, architect, 32 Bank Street, Dundee.

SCOTLAND.—Dec. 23.—For mason, carpenter, plumber, painter, and glazier works of picture house to be erected in Forres. Messrs. C. C. Doig & Son, architects, Forres.

SCOTLAND.—Dec. 23.—For the construction of 1,110 lineal feet, or thereby, of timber wharfing in front of the south quay of Kingston Dock, and the erection of a goods shed, about 1,088 feet long by 60 feet wide, embracing excavator, mason and brickwork, steelwork, timber work, glazier work, slating, plumber work, painter work, and causewaying of quay and shed floor, all under separate schedules, for the Trustees of the Clyde Navigation. The Trustees' Engineer, 16 Robertson Street, Glasgow.

SCOTLAND.—Jan. 6.—For the works to be executed in the construction of new station buildings and relative works at Port Glasgow, for the Caledonian Railway Co. Deposit £2 2s. The Engineer, Buchanan Street Station, Glasgow.

SHEFFIELD.—Dec. 21.—For extension of the male sanatorium at the union hospital, Firvale, for the Guardians of Sheffield Union. Mr. G. D. Baxter, clerk of works, Firvale Workhouse.

SKELMANTHORPE.—Dec. 23.—For erection of a weaving shed at Tenter Croft Mills. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

SOUTHGATE.—Dec. 31.—For the construction of an open-air swimming bath and erection of the necessary buildings and enclosing fences, for the Urban District Council. Deposit £2. Mr. C. G. Lawson, A.M.I.C.E., surveyor, Palmer's Green, N.

SOUTH KIRKBY.—Jan. 10.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with enlargement of South Kirkby Council School: Builder, joiner, slater, plumber, plasterer, painter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

STITHIANS.—Dec. 24.—For erection of a Unionist club-room, for the Unionist Association. Mr. J. A. Richards, monumental mason, Stithians.

TRING.—Jan. 2.—For erection of a police station at Tring, for the Hertfordshire County Council Standing Joint Committee. Deposit £2 2s. Mr. U. A. Smith, county surveyor, Hatfield.

WALES.—For the erection of premises at Penygraig, for the Penygraig Co-operative Society, Ltd. Deposit £1 1s. The Architect's Department, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

WALES.—For the levelling of site and the putting in of foundations for the Aberavon, Port Talbot and District Hospital. Mr. F. B. Smith, M.S.A., St. Oswald's Chambers, Port Talbot.

WALES.—Dec. 28.—For the following works, for the Glamorgan County Council—viz.: (1) New School at Cwrt Sart, Briton Ferry; (2) temporary school buildings at Abercragan; (3) foundations for ditto, fencing, and offices; (4) temporary school building at Cilfrew, near Neath; (5) foundations for ditto, fencing, and offices; (6) Tongwynlais old school, remodelling offices; (7) Caerphilly (Mill Road) school, remodelling offices; (8) Taff's Well Council School, remodelling offices; (9) Albert Road (Penarth) school, remodelling offices; (10) Wyndham Council School (Nantymoel), remodelling offices; (11) Cefn Cribbwr Council

School, remodelling offices. The Glamorgan County Hall, Cathays Park, Cardiff.

WALES.—Dec. 23.—For erection of an electric theatre at Abercynon, for the Abercynon Palace, Ltd. Deposit £2 2s. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

WALES.—Dec. 23.—For (a) erection of 150 houses, and (b) roads and sewers. Mr. T. M. Williams, City Chambers, Queen Street, Cardiff.

WALES.—Dec. 23.—For erection of six cottages at Ynisawdre, Tondy, for the Garw and Ogmore Gas Co. Mr. P. J. Thomas, architect, Bridgend.

WALES.—Dec. 30.—For erection of offices at the Pontardawe Steel, Tinplate and Galvanising Works, for Messrs. W. Gilbertson & Co., Ltd., Pontardawe. Mr. J. C. Rees, M.S.A., Parade Chambers, Neath.

WALES.—Jan. 3.—For erection of an administrative block receiving home, boys' home, stable, &c., at Llwydceod, for the Merthyr Tydfil Board of Guardians. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WHITBY.—For proposed new wing, Raithwaite Hall. Mr. H. G. Walker, M.S.A., architect and surveyor, Golden Lion Bank, Whitby.

WORSBOROUGH DALE.—Jan. 10.—The West Riding Education Committee invite whole or separate tenders for alterations, &c., to Worsborough Dale Council School (builder, joiner, slater, plumber, plasterer and painter). The Education Architect County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

THE INSTITUTION OF CIVIL ENGINEERS.

THE highest marks in the October Associate Membership Examination have been obtained by Mr. C. Quartanos, of Newcastle-on-Tyne, and Mr. H. Knowler, of Sutton, Surrey.

The Council have accordingly directed that Mr. Quartanos, who is ineligible for the Bayliss prize by reason of his not being a present or former student of the Institution, receive honourable mention, and that the prize—of the value of £15—be awarded to Mr. H. Knowler, Stud.Inst.C.E., under the conditions of its foundation.

THE proprietors of Ronuk Sanitary Polish have had the honour to receive a Royal Warrant of Appointment to her Majesty Queen Alexandra.

A NATIONAL Gas Exhibition is to be held during October next at the White City, Shepherd's Bush, London, under the presidency of Mr. Corbett-Woodall. It will be in commemoration of the jubilee of gas engineers and centenary of gas supply. This Exhibition has been organised by a Joint Committee representing the Institution of Gas Engineers, the Society of British Gas Industries, the British Commercial Gas Association, and the municipal and private gas undertakings of the United Kingdom. A special section of the programme is to be devoted to the hygienic and economic aspects of good and bad illumination. Model rooms, lighted by various methods, will be on view, and lectures delivered.

THE President of the Edinburgh, Leith and District Building Trades' Association, ex-Bailie Forrest, speaking at their annual dinner last week, said he was convinced that they were about to have a revival of trade—he would not say a "boom," but if they got good, steady business it would be better than a "boom."

MR. RICHARD NORMAN SHAW, R.A., of 6 Ellerdale Road, Hampstead, Middlesex, architect, left estate valued at £104,627 16s. 4d., with net personalty £99,461 2s. 6d. Testator gave £300 and all the household effects to his wife, and while a widow the use of his house. The residue of his property he left as to one-seventh to his son William Campbell Shaw, one-seventh in trust for his daughter Elizabeth Ellen Shaw, known as Sister Elizabeth Ellen, for life, and then to his two sons, and four-sevenths to his wife during widowhood, or the income from £10,000 should she re-marry, and subject thereto for his two sons.

MESSRS. STEWARTS & LLOYDS, LTD., iron and steel tube manufacturers, desire to feu 16 acres of the lands of Riddrie fronting Cumbernauld Road from the Glasgow Corporation for the purpose of erecting there large engineering works, the machinery in which would be operated by electric power.

MESSRS. KING & ARNELL, LTD., builders, have offered the London County Council a rent of £2,000 for a lease for ninety-nine years of a site in Kingsway, having an area of about 8,000 feet and frontages of 80 feet and 80 feet to Kingsway and Kean Street respectively. The offer is made subject to the condition that for a period of six months the lessees shall be granted the first refusal of a lease, at a corresponding rent, of an adjoining site of equal area.

TENDERS.

CARSHALTON.

For erection of verandahs to double cottage blocks at Queen Mary's Hospital, for the Metropolitan Asylums Board.
Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, Office of the Board, Embankment E.C.

Wilson & Smith	£1,839	0	0
Herring & Son	1,690	0	0
General Iron Foundry Co.	1,670	0	0
Honour	1,596	0	0
Mitchell & Co.	1,578	5	0
Parnall & Sons	1,550	0	0
Sharpin	1,479	0	0
Wall	1,450	0	0
SUMMERS BROS., Rustington (recommended)	1,247	0	0
Engineer-in-chief's estimate	1,170	0	0

HENDON.

For the erection of a central fire station at the Burroughs, for the Urban District Council. Mr. H. A. WELCH, architect, Golder's Green.

Mead	£6,865	0	0
Gough & Co.	6,829	0	0
Garrett & Son	6,818	0	0
H. Lovatt, Ltd.	6,757	0	0
Coles	6,751	0	0
Webster & Sons	6,681	0	0
Lawrance & Sons	6,662	0	0
McCormick & Sons	6,616	0	0
Tout	6,575	0	0
Sabey & Sons	6,555	0	0
Lawrence & Sons	6,550	0	0
F. & G. Foster	6,541	0	0
Moss & Sons	6,476	0	0
Faulks	6,397	0	0
Drever	6,393	0	0
Hunt & Sons	6,361	0	0
Gibson & Co.	6,340	0	0
Taylor	6,300	0	0
Monk	6,280	0	0
Strand Building Co.	6,224	0	0
Halls & Co.	6,198	0	0
Mattock Bros.	6,157	0	0
WHITER & Co., 89 Newington Butts (accepted)	6,113	0	0

HUNTINGDON.

For erection of children's quarters at the workhouse, for the Guardians.

Pettit	£1,889	0	0
Marriott	1,862	0	0
Markham & Brattle	1,849	0	0
Giddens	1,772	9	2
Page & Son	1,700	0	0
Allen & Son	1,696	0	0
Rose & Son	1,665	0	0
Wade	1,361	0	0
Thackray & Co.	1,349	15	4

LONDON.

For the reconstruction of a portion of the Ranelagh sewer under Chelsea Hospital Gardens, for the London County Council.

Holloway Bros. (London), Ltd.	£12,420	0	0
Ford	11,698	7	1
Mowlem & Co.	10,823	16	3
Underwood Bro.	10,803	7	6
Bentley & Son	9,800	2	6
Airds, Ltd.	9,308	18	4
Griffiths & Co., Ltd.	9,158	1	7
COCHRANE & SONS, LTD., Victoria Street, S.W. (recommended)	7,784	0	10
Chief engineer's estimate	8,600	0	0

WALTHAMSTOW.

For alterations and additions to the permanent way, for the Urban District Council.

National Electric Construction Co.	£18,955	15	0
Griffiths & Co.	18,231	6	2
Manders & Co.	17,933	0	0
Pearce & Co.	17,811	0	0
Dick, Kerr & Co.	17,325	8	6
Trentham	16,692	0	0

WALES.

For the erection of the Eisteddfod pavilion, to accommodate 14,000 people, in Bailey Park, Abergavenny, for the Eisteddfod Frenhinol Genedlaethol Cymru, y Fenni, 1913. Mr. B. J. FRANCIS, architect, Abergavenny.

Jones	£1,796	15	0
Miles Bros.	1,524	3	6
Woodhouse & Co.	1,500	0	0
Williams	1,389	0	0
Thomas & Sons	1,385	0	0
Davies Bros.	1,372	14	0
FOSTER & HILL, Abergavenny (accepted)	1,295	0	0

WARMLEY.

For alterations to the isolation hospital.

Britton	£260	0	0
Gunning	205	0	0
Edwards	198	10	0
Adams & Jeffries*	196	0	0
CLARK & SONS, Fishponds (accepted)	195	0	0

* Plus £3 (provisional.)

A NEW ASPHALTE FACTORY.

ALMOST half a century ago Messrs. Engert & Rolfe, Ltd., established themselves on the site of their present works in Poplar—their first place, in 1854, was, however, at Millwall. In the earlier years the reputation of the firm was built up by the excellence of their external roofing, underslating, and, above all, hair felts. But an energetically-managed concern is always on the look-out for opportunities of development and fresh fields to conquer. Messrs. Engert & Rolfe found a promising opening in the direction of natural rock asphalt work. This they followed up with such success that it recently became necessary to erect at the works at an expense of some thousands of pounds an asphalt factory and bitumen refinery. The plant has been specially designed by the most competent, if not the only, specialist in this country, and it embodies certain improvements which in combination cannot probably be found in any other similar plant. The visitor—and visitors are welcome—will be afforded an object-lesson in compactness, and in addition he will receive a graphic lesson in the production of asphalt under the most up-to-date conditions.

The factory lies alongside a canal, on which is conveyed the raw material: the asphalt rock from Sicily, France, and the Limmer Mines of Hanover, and the crude bitumen from the renowned Pitch Lake of Trinidad. The bitumen is first refined and then used as a flux in exactly-gauged proportions to the asphalt rock. This rock is broken by hand to the size of a man's head before being placed in the crushers, where it is broken to the size of walnuts. Next it is conveyed by elevators to the hoppers, from which it descends to the disintegrators for reduction to powder. This powder is then elevated to the top of the building to the screening chamber, the fine powder falling down to a two-way hopper, while the unpowdered pieces automatically return to the disintegrators. This powder is bagged and wheeled direct to the cookers. When sufficiently cooked the asphalt is drawn off and moulded into the usual cakes or poured into the caldrons or "locos" for conveyance to the job.

Messrs. Engert & Rolfe pride themselves on having excellent men, excellent materials, and now an excellent plant. Even with their former plant they built up a high reputation. For instance, they are the triennial contractors to the War Office, and have executed a considerable amount of work for the Office of Works and the London County Council (they are at present engaged upon the asphalt to the new County Hall, Westminster), and can show lists of works executed and in course of execution all over the country. The firm are now in a position to beat all their previous records and to make their name as widely known for asphalt work as it has long been for felts.

THE York Corporation are in negotiation for the purchase of 12½ acres of land, lying between Fulford Road and the river. It is proposed to utilise the front portion for extending the tramways depôt, the centre portion for an open-air school and a school for defectives, and the rear portion for allotments.

ARKLOW Urban District Council invite the services of a competent engineer to recommend (1) the most suitable water supply from a number of given sources, and (2) to give approximately the estimated cost of procuring same. Applications, which must specify fees required, will be received up to January 4.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



From a Drawing by "AVEC BEAUCOUP DE PEUR."

ENGLISH TIMBER: ITS MARKETS, VALUE AND PRODUCTION.*

THE subject of English timber is a wide one, and I intend to review the question of the marketing, value and production of timber in its widest application.

I wish especially to refer to our general policy—or want of it—in the past, and to advocate the great importance of instituting a proper policy, on possibly somewhat new lines, to remedy the present unsatisfactory state of affairs.

Before dealing with any of my three heads, let me remind you what are the conditions of to-day. We find the price of foreign timber continually increasing, recently at an abnormal rate, while the quality as steadily falls off. All consumers agree that the first quality to-day was the third quality twenty years ago; yet the advance in price in twenty

years has been 25, 50 and in some cases 100 per cent. The price of English timber of equal quality, on the other hand, has actually decreased during the same period.

Turning to the production of timber on estates, the lines on which we are proceeding can scarcely be considered satisfactory, or likely to lead to forestry being the sound investment which I believe it to be if conducted on proper economic lines.

Take the case of oak. We have, in our English oak, the finest known timber of its kind, and yet forestry tables prove that it is impossible to secure a return by the production of English oak. These tables are based, of course, on the price—the absurd price—that English oak realises on estates to-day, and which price is influenced not by its intrinsic value, but by a number of other conflicting and depressing causes.

The more we consider the subject of English timber, and especially its markets, or, rather, the absence of them, and the poor price obtainable, compared with the good demand

* Extracts from a Paper by M. C. Duchesne (Fellow), read at the Ordinary General Meeting of the Surveyors' Institution, held on Monday, December 16.

for the foreign, the more we must admit that there is something wrong, and that something should be done to remedy matters.

We have on all hands an immense consumption of wood in every form with large markets at our doors. Let us only cultivate them properly. I submit that it is principally a matter of organisation, coupled with what I may call wide as opposed to local knowledge of supplies and markets. This naturally means that the work of organisation must be on a large scale, and that it is practically impossible for private individuals independently to grapple successfully with the problem. We can succeed only by having an influential body to carry out the work of organisation. In place of spasmodic, disorganised and disjointed attempts on a small scale, we must adopt a complete and broad policy, copy the foreigner, and make woodland industries an important, up-to-date and extensive industry. No matter whether one discusses hoops for barrels with the cooper or English timber with the architect or other consumer, the principal reason they give for buying the foreign article is seldom its cheapness. It is almost invariably the difficulty of obtaining supplies of the native article in the quantity, quality, and at the moment required.

But I fail to see why we allow the foreigner to beat us in one of our own markets in the very centre of England. The principal reason given by consumers is that the foreigner by organisation meets every requirement of his customer, whereas we have no organisation, and require the customer to run after us and hunt up available supplies, because in the past there has been no central body for him to apply to for help.

On the other hand, I may find a local market glutted with English produce, and ruinous competition driving makers to give up an industry. This shows the danger of attempting these matters on a small scale. The only chance of success in all these cases lies in working on a large scale, and with wide in place of local knowledge of markets and supplies.

We shall undoubtedly see in the near future large schemes for the afforestation of what is termed waste land, and State forestry will refer almost entirely to high forest. But with the altered set of conditions in many districts—although I do not anticipate that the scare of the larger landowner will continue indefinitely—I am not at all sure that in estate forestry our hope of salvation may partly lie rather in the direction of coppice than high forest. This opinion is, of course, subject to the great and important change that would follow a proper co-operation and organisation of production and markets on the wide lines which I advocate.

To sum up. The principal reason for the decay of woodland industries and for the absence of proper markets for our timber is the narrow policy in the past of cultivating only a local demand for only local industries by local merchants with only local knowledge; while in the sale of the produce the landowner secured only local competition.

ENGLISH TIMBER.

In my opinion, unless steps are taken on the lines which I shall suggest, it is inevitable that these markets will go from bad to worse. English timber—as is shown by the daily decreased demand—is continually being ousted by the foreign timber in almost every market. I know of existing markets for English timber which will be lost in the near future. Some of these have been looked upon in the past as the backbone of the local trade. In very few of these instances is this loss due to the inferiority of English timber to foreign, but either to the natural change of market conditions or more often, as in the case of underwood, to unorganised marketing. There are new and good markets in plenty to take the place of existing ones as the latter die out, but all these are captured at once by foreign timber, owing to its superior organisation.

English timber suffered greatly through the period of agricultural depression, and the consequent drop in agricultural rents, which absolutely compelled landowners to fell large quantities of their timber. This led to all proper rotations of selling timber being upset, and a general unfortunate policy from which we have never recovered.

Meanwhile, supplies of high-class foreign timber were sent to this country, with the result that the demand for foreign timber increased, and many of the best and most up-to-date merchants discontinued marketing English timber and took up foreign.

Again, the out-of-date methods of many English timber merchants have compared most unfavourably with the foreign trade, both as regards converting and marketing the timber, and especially studying the consumer's requirements. The

principal handicaps of the English timber merchant are lack of capital and enterprise, and his undertakings being on too small a scale. Now that he has to compete in complicated markets with the highly skilled foreigner, the methods necessary are very different from the days when he purchased and converted timber for the simple requirements of local builders and wheelwrights.

The processes by which English timber markets were captured by the foreigner were gradually developed over a number of years. The latter's whole policy has been to market timber by the best and most economical methods; to organise the supply to meet the demand; to advertise the advantages of the produce offered for sale; to find fresh uses for it; to cultivate new markets; and especially, to consult the requirements, convenience, and wishes of customers. In the result architects now almost entirely omit English timber from their specifications, even when they might be anxious to specify it.

One may ascribe this partly to the ease with which any particular variety and quality of foreign timber is obtainable, partly to the many incorrect impressions about English timber that have obtained a firm foothold. Should an architect wish to specify English oak, he is usually informed by the contractor that there is none to be obtained. Again, many absurd and incorrect beliefs are held by architects regarding the sizes, and especially the quality, of English timber. This is mainly the result of unfair comparisons between English and foreign timber made by those who are interested in the latter. What should have been everyone's business has been no one's business, and hitherto nobody has taken steps to ensure fair treatment for English timber.

It is curious that many of the people who should have looked after the interests of English timber appear to have taken delight in going about crying stinking fish. Instead of defending English timber and pointing out its good qualities, they dwell solely on its suggested defects, and gave additional publicity to inaccurate statements, thereby playing into the hands of the foreigner.

English timber has also been hit by unmethodical marketing, which failed to ensure a regular supply.

(To be concluded.)

It has been decided to commence at once with the erection of an addition to the Provincial Police Orphanage, Redhill, Surrey. The new building will provide dormitories for forty-eight girls, with extensive bath and lavatory accommodation on each floor, eleven rooms for staff, new boiler house, stores, &c. The cost of the works is £4,000, and the architect Mr. J. Augustus Souttar, of 52 Bishopsgate, E.C.

A NEW head Post Office has been erected at Bishop's Stortford, and was opened for the use of the public on the 9th inst. The buildings comprise, amongst other accommodation, public office, sorting offices, telegraph and telephone instrument rooms and battery house, postmaster's offices, postmen's, linesmen's and telegraph boys' rooms, rest-rooms for the clerical staff, lavatories, cycle house, truck shed, engineers' stores-house, and numerous other stores-rooms, &c. Provision has been made for future extension and enlargement. The buildings have been erected by Messrs. J. Day & Son, of Bishop's Stortford, from the designs and under the superintendence of Mr. W. H. Atkin-Berry, F.R.I.B.A., of the firm of Messrs. Kidner & Berry, London.

THE Barnsley Town Council on Tuesday adopted a recommendation by a committee appointed to consider the question of a new town hall that the new building should be erected on the site of the present Manor House estate and the Central Chambers estate in Church Street, at an approximate cost of £15,000.

THE Sunderland Town Council decided that the plans passed on February 17 for adapting the Bede school buildings and the Cowan Terrace School for secondary education purposes should be rescinded, and that a larger scheme, under which a girls' secondary school would be provided on the present Bede site, and a boys' secondary school be erected on a new site should be adopted.

THE Plans and Works Committee of Edinburgh Town Council received a deputation on the 12th inst. from the Edinburgh building trades and electrical contractors with reference to the fair wages clause in Corporation contracts. The deputationists offered objections to the antecedent part of the clause and generally to its inquisitorial character. The matter was referred to a sub-committee in order, it is understood, to ascertain the operatives' point of view.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BEDFORDSHIRE.

Luton.—Council schools, Leagrave Road. Messrs. J. R. Brown & Son, architects.

BUCKINGHAMSHIRE.

Amersham.—House, Amersham Hill Avenue. Mr. W. Gomm, builder.

Penn.—House, Penbury Grove, for Mr. H. Crane.

CAMBRIDGESHIRE.

Cambridge.—Primitive Methodist Church, Castle Street (£5,000). Messrs. A. F. Scott & Son (of London and Norwich), architects.

CHESHIRE.

Macclesfield.—Picture house, Buxton Road.

Parish Church, Hurdsfield: restoration (£850).

Runcorn.—Cinematograph Hall, High Street (for 800 sittings), for Mr. Thomas Aulton (of Southport).

Public Hall, next Bank Chambers, for Mr. Alphonso Smith (of Salford).

Tarporley.—The National and Utkinton Schools: alterations.

CORNWALL.

Budock Royal.—County secondary school for boys.

CUMBERLAND.

Whitehaven.—Coach works, New Road: additions and alterations. Mr. J. S. Stout, architect.

DERBYSHIRE.

Chesterfield.—Church, Stonegravel: extension.

Heanor.—Elementary school for 936 places (£10,250).

DEVON.

Barnstaple.—Battalion headquarters for the County Territorial Force Association.

Budleigh Salterton.—Detachment Drill Hall, &c., for the 4th Battalion as above.

Devonport.—Guildhall and Municipal Offices (£70,000).

Holsworthy.—Drill Hall, &c., for D Company, 6th Battalion of Territorial Force Association.

South Molton.—Artisans' dwellings.

Torquay.—Memorial Hall, Park Street (£2,000).

Torrington.—Drill Hall, &c., 6th Battalion and Squadron Headquarters, Royal N. Devon Hussars.

Umbleigh.—Council school (£2,150).

DORSET.

Motcombe.—Stalbridge Memorial Hall.

ESSEX.

Maldon.—Sixteen houses for the working class (£3,000).

Ongar.—Workhouse: alterations.

Wansted.—Fire Station (£1,250).

HERTFORDSHIRE.

Bishop's Stortford.—Hospital: Lady Gold Memorial wards.

LANCASHIRE.

Audenshaw.—Leather works: re-building. Messrs. J. H. & J. A. Percival (of Ashton-under-Lyne), architects.

Liverpool.—St. Barnabas Church: completion (£11,300). Roman Catholic Church, West Derby (£6,000).

LEICESTERSHIRE.

Hinckley.—Isolation Hospital (£6,000).

Leicester.—Wyggeston Schools: extension.

LINCOLNSHIRE.

Scunthorpe.—Masonic Hall, Crosby. Mr. A. M. Cobban, architect.

MIDDLESEX.

Hendon.—Court House (£3,400).

MONMOUTHSHIRE.

Bedwas.—Villa, Bryngwyn Street. Mr. G. L. Rees, architect.

NORFOLK.

Hindolvestone.—Church.

NORTHAMPTONSHIRE.

Peterborough.—Petty Sessions Court House (£1,500). Messrs. Townsend (A.R.I.B.A.) & Fordham, architects.

Two houses, Alexandra Road, for Mr. Marlow.

Shop, Midgate, for Mr. T. L. Barrett.

Weston Favell.—Convalescent Home: additions and alterations. Mr. W. Shaw (of Northampton), architect.

NOTTINGHAMSHIRE.

Norwell.—"The Beacon": additions and alterations. Mr. George Wells (of above), architect.

OXFORDSHIRE.

Banbury.—Forty houses, off Paradise Road (£6,500). Messrs. G. Lucas (F.R.I.B.A.) & Lodge (of London), architects.

SHROPSHIRE.

Clee Hill.—Public Elementary School, Cainham (for 200 places).

SOMERSET.

Bridgwater.—Picture theatre and shops, High Street (£11,000). Mr. B. Crewe (of London), architect.

Taunton.—St. Mary's Church: Askwith Memorial Vestry, &c. (£750). Messrs. Naylor & Sale, F.R.I.B.A. (of Derby), and Messrs. Sprankling & Price, joint-architects. Messrs. Spiller & Browne, contractors.

STAFFORDSHIRE.

Leek.—Twenty-four houses, Spring Gardens. Messrs. Bayley & Morris, builders.

Lichfield.—Wesleyan Sunday School, Tamworth Street.

Tamworth.—Workhouse: alterations (£1,600).

Walsall.—Post Office, Hatherton Place.

SURREY.

Compton.—Parish Church repairs (£550). Mr. Weir (architect to the S.P.A.B.), architect.

Hook.—Church Schools: enlargement and improvement (£800).

SUSSEX.

Battle.—Drill Hall for the County Territorial Force Association.

Brighton.—Workhouse alterations (£3,000).

Hayward's Heath.—Congregational Church, South Road. Wesleyan Church: enlargement, &c.; rebuilding schoolroom.

Horsham.—Two schools, New Street.

WILTSHIRE.

Melksham.—Picture theatre (£2,000). Messrs. Bennett & Stratton, A.R.I.B.A. (of Finchley), architects.

WORCESTERSHIRE.

Bromsgrove.—Workhouse: Children's Home.

YORKSHIRE.

Bridlington.—No. 3 Kirkgate: additions and alterations. Mr. F. Walkington, architect.

Castleford.—Three houses, Savile Road. (Apply, Mr. E. Craven, 46 Rhodes Street.)

Dewsbury.—House, &c., Thornhill Lees, for the Working Men's Club. Messrs. J. Barton & Son (architects).

Gawber.—House. Messrs. R. & W. Dixon (of Barnsley), architects.

Harrogate.—St. Mary's Church.

Leeds.—Clothing factory, Grace and Princess Streets. Mr. G. F. Bowman, architect.

Oulton-with-Woodlesford.—Council School: enlargement by 150 places.

Rotherham.—"Empire" Theatre, High Street (1,600 sittings) £20,000.

Scarborough.—Municipal School: additions and alterations (£1,550).

WALES.

Llanelly.—Electric Theatre, New Dock Road. Mr. O. P. Bevan, P.A.S.I. (of Merthyr Tydfil), architect.

Pembroke.—Drill Hall and Headquarters for the County Territorial Force Association. Mr. H. J. P. Thomas (of Haverfordwest), architect.

Swansea.—Central stores for the Corporation, Pottery Wharf (£15,000). Mr. G. Bell, A.M.I.C.E., Borough surveyor.

SCOTLAND.

Anstruther.—Golf cleeck factory, Shore Road, for Mr. D. W. Brodie.

Ayr.—Mercat Cross: re-erection (£600). Mr. J. K. Hunter, F.R.I.B.A., architect.

Buckie.—Church Hall, Portessie.

Cathcart.—Electric Theatre, Castle Street, for the Cathcart Picture Playhouse Co., Ltd.

Glasgow.—Ten self-contained houses, off Kelvindale Road. Mr. W. Waddell, builder.

Two double houses, Springburn Road, for Mr. W. Nimmo.

Special school for defective children, Garrioch Road, for the School Board.

Electric Theatre, corner of Vinicombe and Cranworth Streets, Hillhead, for the Hillhead Picture House, Ltd.

Kirkcconnel.—Board School enlargement (£3,550).

IRELAND.

- Curragh*.—Curragh House. Messrs. Orpen & Dickinson (of Dublin), architects.
Dublin.—Picture house, St. Mary Street. Mr. G. L. O'Connor, M.R.I.A.I., architect.
Longford.—"Castleforbes": additions. Mr. W. Coote, contractor.
 (Supplementary to last issue.) St. Mel's College: additions. Mr. T. F. Macnamara (of Dublin), architect. Mr. P. Kelly, contractor (£4,000).
Pembroke.—Working-class lodging-houses, Beatty's Field (£8,600) and Duignan (£12,000).

PATENT SPECIFICATIONS PUBLISHED DECEMBER 12, 1912.

Selected by James D. Roots, M.I. Mech. E., Thanet House Temple Bar, London.

- No. 10,260. Nov. 27, 1911.—J. Zwicky, 66 Chester Road, South Tottenham. Fire-extinguishing and like apparatus.
 18,503. Aug. 16, 1911.—Ludwig Grote, 177 Mount Pleasant Road, Tottenham, and A. H. Vivian, 103 Hop Exchange, London, S.E. Material or composition or mouldable substance, and process of manufacturing same.
 25,550. Nov. 16, 1911.—F. W. Campbell, 1 Laureldene, Cliftonville Road, Belfast, and J. M. Leighton, 4 Easton Crescent, Belfast. Formation of concrete piles.
 26,198. Nov. 23, 1911.—A. R. Purchas, 158 Unthank Road, Norwich. Means for preventing rattling of windows.
 26,211. Nov. 23, 1911.—W. T. Lord, 3 Holland Lane, Kensington, W. Fire grates.
 26,802. Nov. 30, 1911.—James Reed, 120 Cavendish Road, Clapham Park, S.W., and R. Waygood & Co., Ltd., Falmouth Road, Great Dover Street, S.E. Locking apparatus for use on gates, doors, or shutters, for the protection of the entrance to the wells or gates of lifts, hoists, and the like.
 26,951. Dec. 1, 1911.—A. B. Walker, Donwal, King's Road, Wallsend, Northumberland. Gas and similar radiators, stoves, and the like.
 27,340. June 6, 1912.—Herbert Smethurst, Stanley Road Works, Stanley Road, Hollinwood, Lancaster. Vacuum dusting and cleaning apparatus.
 736. Jan. 10, 1912.—T. R. Castle, 12. and T. R. McDowall, 11 Cormont Road, Camberwell, S.E. Means for securing glass or lights to glazing bars.
 3,297. Feb. 9, 1912.—F. H. Neale and F. G. Giles, 117 Scholefield Street, Birmingham. Casement and fan-light stays.
 4,098. Feb. 19, 1912.—Ellis Nuttall, 218 Station Road, Horwich Junction, Blackrod, near Bolton. Method of jointing or welding articles of metal.
 5,953. Mar. 9, 1912.—William Schmail, Magic Appliances, Ltd., and the Armorduct Manufacturing Co., Ltd., 6 Farringdon Avenue, E.C. Vacuum-cleaning machine for the extraction of dust.
 6,604. Mar. 18, 1912.—Richard Miles, 31c Mill Road, Maldon, Essex. Wood-planing or moulding machines.
 7,278. Mar. 25, 1912.—G. J. and A. G. Coutu, 159 Colburn Street, Lowell, Middlesex, Mass., U.S.A. Fire-extinguishing apparatus.
 11,492. May 14, 1912.—S. D. Stauffer, Lancaster, Penn., U.S.A. Combined steam and water radiators.
 12,369. May 24, 1912.—Max Mayer, 47 Bosestrasse, Tempelhof, & W. Holweh, 8 Rotherstr, Berlin. Producing air gas.
 12,571. May 28, 1912.—Date claimed under International Convention, June 3, 1911, and 12,671, May 29, 1912. Date claimed under International Convention. Sept. 21, 1911.—Felix Blazicek, 17 Straussengasse, Vienna, V. Austria. Wall safes.
 13,438. June 7, 1912.—G. Schrepfer, Ginshein, Post Gustavsbury, Germany. Interlocking building blocks.
 14,359. June 19, 1912.—F. J. J. Gibbons, St. John's Works, Church Lane, Wolverhampton. Door-closing contrivances.
 21,419. Sept. 20, 1912. Date claimed under International Convention, April 23, 1912.—M. Schiffer, Stephanstr 10, Aachen, Germany. Pile-plankings made of rolled-iron sections.
 21,749. Sept. 24, 1912.—V. Dietz, 36 Hyatt Avenue, Yonkers, N.Y., and C. F. Dietz, 1826 Anthony Avenue, Bronx, New York, U.S.A. Mausoleum and like construction.

EFFECTS OF TOWN AIR ON METALS.*

(Concluded from last week.)

DAVIS calculated that "coal smoke alone produces annually in the British Isles about 3,000,000 tons of sulphuric acid, most of which is showered down in the rain," and Dr. Carpenter estimated that at Widnes the same source gave 120 tons of sulphuric acid per day, to be condensed on metallic and other surfaces. Angus Smith found that the sulphuric acid in town rain was from six to twenty-six times that in the country, the average in English towns being about thirteen. The *Lancet's* analyses of London and Kent snow in 1906 showed in the former (as grains per gallon) 1.73 of sulphuric acid and 5.6 of solid matters containing tar; in the latter the figures were nil and 1.68 respectively. The Manchester Air Analysis Committee at an earlier date published a large number of determinations of the oxidised sulphur in the air of their city. Some of my own results with the atmosphere of towns as compared with the country have been recorded in the *Journal of the Sanitary Institute* and elsewhere.

I may recall an interesting observation of G. Witz in 1885 (*Comptes Rendus*, c. 1385), from which he inferred the existence of sulphurous acid "as a normal constituent of the air of towns." He remarked that placards covered with red lead, posted in situations where they are protected from the sun and rain, become gradually decolourised, whereas similar placards exposed under similar conditions in country air retain their colour unimpaired. The decolourised placards were found to contain lead sulphate and lead sulphite. He was also frequently able to recognise sulphurous acid in hail, snow, and especially hoar-frosts in the neighbourhood of towns.

But although the sulphur impurity of town air is commonly spoken of as sulphurous acid, the statement is not generally correct. As diffused in contact with excess of oxygen and moisture, aided by traces of nitrous compounds, and by ozone, which by this and other processes is eliminated from town air, SO_2 is almost at once oxidised into the more energetic sulphuric acid, and by this oxidation the destructive activity on metals is increased.

Some other ingredients of soot that would seem at first sight to be inert—namely, carbon and oxide of iron—have been proved to be agents in corrosion, on account of the fact that the action is probably for the most part electrolytic. Sir Gerald Muntz at the Institute of Metals in 1910 attributed a great part of the corrosion of brass in sea-water to "the juxtaposition of carbon." Tilden found that ferric oxide in contact with iron formed a couple in which the oxide was electro-negative, therefore the oxygen would be driven towards the metal, accounting for the gradual invasion of "pitting" under the spots of rust. Moreover, oxide, like all porous substances, absorbs air, and in that way tends to localise the effect. Bruhl's researches for the same Institute in 1911 also led to a conclusion that the local effect known as "pitting" was caused by electro-chemical action set up by certain substances, "and of these ferric hydrate and carbon are probably the worst."

Even when we protect bright surfaces in towns by gilding we find that its brightness does not last, and gold articles often become dull. The pure metal gold is little affected by atmospheric influences, but on account of its softness it is alloyed with copper and sometimes other metals to such an extent that some of these mixtures are nominated as "9 carat," or only 37 per cent, gold. The alloys will be, of course, affected proportionately by atmospheric tarnishing, and their frequent cleaning will occasion an appreciable loss of gold. Modern electro-chemistry has succeeded in plating with alloys. Much gold leaf is hammered from an alloy, and it has been remarked that the gilt titles of books in town libraries have a tendency to become faded, which does not occur in the country. It is evident that with all bright metals the constant cleaning necessitated by the attack of town gases and the sooty film occasions a loss of the body of the substance, without speaking of the immense aggregate labour involved. Brass and bronze are not dissolved uniformly, the more positive metal zinc being oxidised first, so that in extreme cases the copper is left in a spongy state, the alloy becomes brittle and is rapidly worn away.

Atmospheric corrosion effects constant damage, resulting sometimes in serious accidents, by causing loosening or detachment of metallic fastenings. The perishing of wires and

* A Paper by Dr. S. Rideal, D.Sc., F.I.C., prepared for presentation to the International Smoke Abatement Conference at the Agricultural Hall, London, N.

electric fittings has given rise to interrupted connections or even to fires from short circuits.

The corrosion of iron is deeper and more rapid. In a pure atmosphere, containing, besides the inert nitrogen, only oxygen, carbon dioxide, and water vapour, iron can remain nearly or quite rustless. The ordinary commercial metal has less immunity, since it contains, among other impurities, sulphide, phosphide, carbide, and free carbon; still the action under these conditions is slow. But if saline substances and strong acids are introduced with the water, the rusting becomes active, and with the aid of electrolysis the corrosion quickly extends. It may be noticed that with nearly all metals, whether the vapours or solutions are acid, alkaline, or neutral, if salts are present the latter become dissociated by great dilution, and the ammonia can act, for instance, on copper, and the sulphuric acid on iron.

I was called in consultation in 1905 on the accident at the Charing Cross Station, when the roof girders collapsed through rusting, and analysed many samples of the rust. One sample from a lateral girder contained 4.25 per cent. sulphuric acid (as SO_3), equal to 8.95 per cent. of iron dissolved as ferrous sulphate. The rusting is obviously more rapid in closed spaces where the acids from coal consumption are restricted in range, and especially on a roof where condensation will occur. At the same time similar results of analysis were obtained from other London stations, while in the open country and at an erection in a small town (Dorchester Cattle Market) exposed iron had much less rust, with about one-fourth to one-third the amount of sulphate. It was found in this case that the accident was owing to the structure not having been properly protected by painting. When hot oil is put on the clean metal immediately after rolling, it forms a permanent coating; similarly in repainting old work it is essential that it should be properly cleaned with wire brushes and free from rust, and a coating of oil applied hot, which will then adhere.

Other constituents of town soot deposits are chlorides and lime compounds. The above-mentioned report on the soot-fall of London remarks that "the presence of chlorides in the rainfall of London is a mystery, as both coal and gas are free from chlorides." But the distinct traces of chloride in various coals have escaped notice as not being ordinarily of commercial importance. Wills found in one variety from Staffordshire 0.06 per cent. of chlorine. There were also several other sources of chlorides in the atmosphere of towns, such as the burning of refuse, and an appreciable amount is given off by living beings. It has been proved that marine spray is often carried by wind for long distances inland, and this in towns is absorbed and concentrated by the soot. Sulphuric acid from coal burning would liberate hydrochloric acid from chlorides, and the latter acid has a quicker solvent action on many metals than sulphuric. As to lime compounds derived from the ash of coal and from the dust of building operations, they simply, as a rule, add mechanically to the incrustation on metallic surfaces, and may rather hinder corrosion.

A few words must be said on the action of some of these impurities on metallic pigments. Unfortunately, many artists, notably Turner, have made free use in their pictures of lead preparations, which are seriously affected by sulphuretted hydrogen and sulphurous acid, the one by blackening, the other by bleaching. The best varnishing, and even glass, does not protect entirely from town air. Darkening of ordinary white paint, containing as it does lead hydrocarbonate, is familiar, and necessitates continual great cost in repainting.

As to remedies for the action of town air on metals, protection of the surface has always been practised, and varnishing, lacquering, and painting are effectual for the time. The principle of guarding by a more electro-positive metal, as in the so-called galvanising with a coat of zinc, is one of the resources; in this case, atmospheric action causes a solution of the zinc, or a crust of oxide, carbonate, or basic sulphate, while the structural iron is protected. On the other hand, in common tinning, although tin itself is almost proof against air gases, the iron underneath, if in any way the coating be broken, is more rapidly corroded. Plating with nickel is well known. Aluminium is especially affected by alkalies; a recent patent (22,684 of 1910) protects it by a film of copper, supplemented by a special lacquer. I found that the coating retards the attack on the metal and prolongs its life for many industrial purposes.

Some of the more or less successful protective methods depend on forming hard uniform and coherent coatings analogous to those which are produced irregularly and loosely by atmospheric influences. Examples are the Bower-Barff process, in which a film of magnetic oxide is formed on iron

by heating in steam; the "bronzing" or "browning" of gun-barrels, and the sulphurising or so-called "oxidising" of silver.

In America a very pure form of iron, called "ingot iron," has been recently made, and is said to be almost rust-proof, and to have a power of resisting acids which is twenty times that of ordinary steel.

A common drawback of coatings of metals less subject to attack, and of varnishes and lacquers, is that they either crack or scale off easily or have pin-holes or scratches; such defects in many cases increase the rate of corrosion, making it irregular and local, and actually more dangerous because unseen. Enamelled iron is good when stationary, and it is common observation how serviceable it has proved for street signs.

I dealt with this subject at the Conference on Smoke Abatement in 1905, and gave statistics of the time in the paper "Acids of Smoke," published in the Journal of the Royal Sanitary Institute. Since then there has been much improvement in the conditions, owing to the work of smoke abatement societies, and to the introduction of smokeless lighting by incandescent burners and by electricity, and of heating by gas stoves instead of coal fires. We must remember in the present purification of gas 90 per cent. of the sulphur in the coal is removed, and the methods of burning eliminate the evils of smoke and soot, which we have shown to have pre-eminently the most injurious effect on metals.

VARIETIES.

MESSRS. W. V. & A. R. GOUGH, architects, Bristol, have prepared the plans for completing the church of St. Aldhelm, Bedminster, at a cost of £3,000.

THE Keighley plumbers' strike is at an end, the men having accepted the masters' offer of $\frac{1}{2}d.$ advance now to $8d.$ per hour and $\frac{1}{2}d.$ a year hence.

THE Port of London Authority have accepted the tender of Messrs. Perry & Co., amounting to £105,466, for the construction of a deep-water riverside jetty at Tilbury.

MR. E. B. L'ANSON, M.A., F.R.I.B.A., who died recently at the age of sixty-nine, left estate of the gross value of £87,194, of which the net personalty has been sworn at £70,746.

FURTHER wages advances for carpenters and joiners are officially announced as follows: Arbroath, Glossop, and Worksop—one halfpenny per hour with better working rules; Sunderland, one farthing per hour.

THE committee of the proposed South London Hospital for Women have received an offer from some sympathisers of a site at Clapham Common and a donation of £25,000 for the erection of the necessary buildings.

THIS year has been a record building year in the city and suburbs of Sydney, New South Wales. The expenditures, with the cost of the Harbour Trust buildings, amounting to £175,000, made an aggregate of £6,299,000, or over £750,000 more than in 1911.

THE Newcastle Education Committee have given authority to the sub-committee to recommend the appointment of an architect or architects to submit for consideration designs for a complete scheme of extensions to Rutherford Technical College. The cost of the first stage of the extensions is estimated at £10,000.

THE Carpenters' Company has again issued particulars of a course of lectures to be delivered in their hall on the arts connected with building. The names of the lecturers are a sufficient guarantee for their excellence, and the whole series is an interesting one to artists and craftsmen connected with buildings. The first lecture will be given on January 8 next at 7.45 p.m. by Sir Alfred East, R.A., the subject being "The Value of Colour to the Crafts."

TRADE NOTES.

UNDER the direction of Mr. J. A. Marsden, architect and surveyor, Doncaster, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Picture Palace, Doncaster.

OWING to the continued expansion of their business, Messrs. W. F. Stanley & Co., Ltd., have been compelled to provide much larger office accommodation, and they will in future occupy the whole of the upper part of the premises at 286 High Holborn, W.C., where their showrooms have been on the ground floor for some time, retaining their old premises at 4 and 5 Great Turnstile, Holborn, W.C., for export only.

THE
Architect and Contract Reporter.

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NOTICE TO ADVERTISERS.

Under no circumstances whatever can the Proprietors of this Journal guarantee alteration of copy if received after the first post on Tuesday mornings, and no proofs can be submitted if copy arrives later than first post on Saturday mornings.

Special Position Spaces.—Unless ordered for weekly insertions the Proprietors cannot guarantee particular dates.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The authors of signed articles and papers read in public must necessarily be held responsible for their contents.

Correspondents are requested to make their communications as brief as possible. The space we can devote to Correspondence will not usually permit the insertion of lengthy communications.

TENDERS, ETC.

* * As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.

COMPETITIONS OPEN.

BELFAST.—Jan. 1.—The Corporation invite designs in competition for 126 houses of two apartments each and 126 houses of three apartments each. Premiums of £25, £15, and £10 are offered for those designs placed respectively first, second and third for each of the two sizes of dwellings. Mr. H. Seaver, B.E., architect, Belfast, and the City Surveyor will act as assessors. Printed conditions and block plans of the sites will be supplied on payment of £1 1s. deposit by Mr. H. A. Cutler, M.Inst.C.E., city surveyor, Town Hall, Belfast.

DUBLIN.—The Estates and Finance Committee of the Dublin Corporation invite competitive designs for proposed municipal offices. Copies of conditions and instructions, together with other particulars, may be had on payment of £2 2s. deposit to Mr. E. W. Eyre, City Treasurer, Municipal Buildings, Dublin.

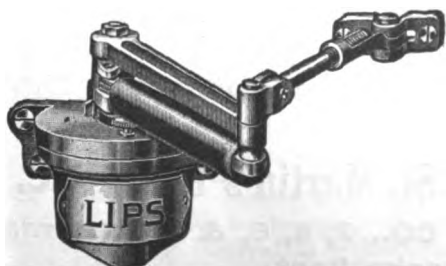
HARROGATE.—Feb. 3.—The Education Committee invite designs for an elementary Council School which they propose to erect in the Skipton Road, to provide accommodation for 675 children. A copy of the conditions of competition may be obtained from Mr. C. E. Rivers, A.M.I.C.E., borough engineer, Municipal Offices, Harrogate.

HAYTI.—Feb. 4.—The Acting Consul-General at Port-au-Prince reports the announcement in the *Moniteur* of a competition of designs for a national palace at Port-au-Prince. Plans will be received by the "Département des Travaux Publiques," Port-au-Prince, up to Feb. 4, and prizes of \$500 (about £103), \$250, and \$200 will be awarded. The building and furnishing of the new palace, is expected to cost about £80,000. The *Moniteur*, containing further particulars, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

HEMEL HEMPSTED.—Jan. 31.—The Town Council invite competitive designs for a housing scheme, comprising twenty-five houses. Premium offered £20. Deposit £1 1s. The Borough Surveyor, Town Hall, Hemel Hempstead.

(Continued on page 7.)

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AGENTS IN CAPE TOWN:—Messrs. D. M. MURRAY & CO., 2, 4, 6, & 8 Greenmarket Square. Importing Agents. Stocks kept.

JAMAICA.—Jan. 31.—The Mayor and Council of Kingston offer a prize of £100 for a design for municipal buildings (suitable for construction in reinforced concrete) to cost not more than £9,000. Charge 2s. For information apply to Messrs. Alexander Young (London), Ltd., 60 Fenchurch Street, London, E.C.

LANCING.—Sketch plans are invited for church accommodating 500 people, to be erected in South Lancing, to cost, when completed, from £4,000 to £5,000. Communications to be sent to the Secretary of Building Committee, Rev. E. Peel, Lancing Vicarage, Worthing.

SWAFFHAM.—Jan. 25.—The Rural District Council are about to submit schemes to the Local Government Board for erection of workmen's cottages, and invite plans, specifications, and estimates (on the cubic principle) for suitable cottages (in pairs only), each cottage to contain not less than three bedrooms, with suitable living rooms and offices. The person whose design is selected and approved will be paid £10 premium. Mr. S. Matthews, clerk, Swaffham, Norfolk.

WELLINGTON (SALOP).—The Urban District Council invite competitive designs for houses to be let at 3s. to 3s. 6d. a week. A prize of £10 10s. will be given for the design most approved by the Council, and the plans for which such prize is awarded shall become their absolute property. No undertaking is given or to be implied that the architect submitting such plans will be employed to carry out the work, or that the scheme or design will be carried out. Mr. J. W. Littlewood, Clerk, Bank Chambers, Wellington, Salop.

CONTRACTS OPEN.

BECKENHAM.—Jan. 13.—For the following, for the Urban District Council—viz.: (1) Supply and erection at Kelsey Park, Beckenham, of two rustic thatched shelters, about 32 feet by 16 feet each; (2) supply of some 180 rods of rustic fencing, 3 feet high; and (3) the erection of a greenhouse, 20 feet by 10 feet. Deposit £1. Mr. J. A. Angell, surveyor, Beckenham.

BLACKHILL.—For erection and completion of the various works required in proposed premises, Derwent Street, Blackhill, Durham, for Messrs. Walter Willson, Ltd. Mr. D. M. Spence, architect and surveyor, 24 and 25 Central Exchange Buildings, Newcastle-on-Tyne.

BOOTLE.—Jan. 3.—For alterations and additions to the Territorial quarters of the 7th Battalion the King's (Liverpool Regiment), in Park Street, for the West Lancashire Territorial Force Association. Deposit £1 1s. Mr. H. L. Beckwith, architect, Bank Chambers, 3 Cook Street, Liverpool.

BRADFORD.—Dec. 28.—For the work required in erection of a weaving shed at Norwood Green, near Wyke, Bradford. Drawings may be seen and bills of quantities obtained at the offices of Messrs. Moore & Crabtree, architects, York Chambers, Keighley, on Dec. 28.

BROCKENHURST.—Dec. 30.—For the reconstruction of the superstructure of Brockenhurst Bridge, consisting of two 20 ft. spans of steel decking, for the Hampshire County Council. Deposit £2 2s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

BUNTINGFORD.—Jan. 8.—For the construction of a precipitation tank at the sewage disposal works. Mr. E. G. Thody, surveyor, Rural District Board Room, Buntingford.

CARLISLE.—Jan. 13.—For the whole of the work required in providing additional storage at Earl Street, for the County Property Committee. Mr. G. Dale Oliver, F.R.I.B.A., County architect, Carlisle.

CHATHAM.—Jan. 4.—For erection of an elementary school at Ordnance Street, for the Education Committee. Send applications and £2 2s. deposit by Jan. 4 to Mr. G. F. Bond, architect, High Street, Rochester.

CHORLTON-CUM-HARDY.—Jan. 8.—For reinforced concrete work at the Carnegie library, Chorlton-cum-Hardy, near Manchester, as follows: Dome, 28 feet, octagon; roof, flat, 400 super yards; floor, 145 super yards, for the Libraries Committee. Deposit £1 1s. The City Architect, Town Hall, Manchester.

CLEETHORPES (LINCS).—Jan. 16.—For additions to the Bancroft Street Council school at Cleethorpes, for the Lindsey County Council Education Committee. Send applications and £1 1s. deposit by Jan. 1. Messrs. Scorer & Gamble, architects, Bank Street Chambers, Lincoln.

COTTERED.—Jan. 8.—For the repair of the public draw well upon the green at Cottered, near Buntingford, for the Cottered Parish Council. Mr. E. G. Thody, surveyor, Buntingford.

COTTINGHAM.—Jan. 1.—For alterations and additions to the Council School, for the East Riding of Yorkshire County Council. Deposit £1 1s. Apply at the School and the Building Surveyor, County Hall, Beverley.

DONCASTER.—Dec. 30.—For the erection and completion of a Nurses' Aid and Rescue Station at Wheatley, Doncaster. Send applications by Dec. 30 to Mr. James E. Knight, architect, 33 College Street, Rotherham.

DORCHESTER.—Jan. 2.—For alterations and repairs to the stables at Loud's mill. The Borough Surveyor, North Square, Dorchester, Dorset.

EAST HAM.—Jan. 21.—For erection of Brampton Road school to accommodate 1,491 scholars. Send application by Dec. 31 to Mr. R. L. Curtis, architect to the Education Committee, 11-12 Finsbury Square, London, E.C.

FORDINGBRIDGE.—Jan. 11.—For alterations and additions to the cells and police station at Fordingbridge, for the Hampshire County Council. Deposit £1 1s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

FOWEY.—Jan. 6.—For erection of cottage hospital, Fowey. Deposit £2 2s. Mr. C. W. Parkes Lees, architect, Porthpean House, Lanteglos-by-Fowey.

HUNMANBY.—Jan. 1.—For erection of a teacher's house at the Council School, for the East Riding of Yorkshire County Council. Apply at the School and the Building Surveyor, County Hall, Beverley.

IRELAND.—Jan. 2.—For additions and alterations to St. Agnes' Hospital workhouse Cork. Mr. J. Cotter, clerk, Board Room, Cork.

IRELAND.—Jan. 13.—For erection of two houses at Markethill station, Armagh, for the Great Northern Railway Co. (Ireland). Deposit £1 1s. The Engineer's Offices, Dublin and Belfast.

IRELAND.—Jan. 15.—For the building of thirty labourers' and fourteen artisans' cottages at Workhouse Road, Ballina, for the Urban Council, together with boundary walls, sewers, roads, &c. Charge 5s. Mr. J. S. Cairns, C.E., architect, Ballina.

IWADE.—Jan. 11.—For the erection of a Council school of special construction in steel and concrete to accommodate 120 scholars at Iwade, for the Kent Education Committee. Send applications and £1 deposit by Jan. 1 to Mr. F. W. Crook, secretary, Caxton House, Westminster, S.W.

KIPPAX.—Jan. 10.—The West Riding Education Committee invite whole or separate tenders for the following works: Kippax Council school additions (builder, joiner, slater, plasterer, plumber, and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

LONDON.—Jan. 2.—For erection of additional bedrooms for officers over the east wing of the front central block at their infirmary, Dartmouth Park Hill, N., for the St. Pancras Borough Council. Deposit £5. Mr. J. E. P. Hall, clerk, Town Hall, Pancras Road, N.W.

LONDON.—Jan. 2.—For taking down and rebuilding parapet and certain other works at Nos. 31 and 32 Tredegar Square, Mile End, E., for the Guardians of Mile End Old Town. Mr. E. J. Harrison, architect, 9 Gray's Inn Square, W.C. Send £1 deposit to the Clerk to the Guardians, and delivered at the Guardians' Offices, Bancroft Road, Mile End, E.

LONDON.—Jan. 7.—For fire-proofing the central octagon and wings at the National Gallery, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. H. A. Collins, H.M. Office of Works, Storey's Gate, London, S.W.

LONDON.—Jan. 9.—For certain sanitary works, &c., at the St. George's Workhouse, Mint Street, S.E., for the Guardians of the Southwark Union. Deposit £5. Mr. A. Saxon Snell, F.R.I.B.A., architect, 9 Bentinck Street, Manchester Square, W.

LONDON.—Jan. 21.—For the construction of buildings for public conveniences on the Victoria Embankment, near Blackfriars Bridge, for the London County Council. Deposit £1. Sir Maurice Fitzmaurice, C.M.G., chief engineer of the Council, County Hall, Spring Gardens, S.W.

LYMINGTON.—Jan. 11.—For alterations and additions to the cells and police station at Lymington, for the Hampshire County Council. Deposit £1 1s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

NAFFERTON.—Jan. 1.—For the erection of a Council School for 136 children, for the East Riding of Yorkshire County Council. Deposit £1 1s. The Building Surveyor, County Hall, Beverley.

NANSPUSKER.—Jan. 1.—For building a pump house of masonry, 32 ft. by 27 ft., at Nanspusker, Cornwall, about three miles from Hayle station, for the Phillack Urban District Council. Mr. G. W. Harris, A.M.I.C.E., 1 Holyrood Place, The Hoe, Plymouth.

SCOTLAND.—Jan. 6.—For the works to be executed in the construction of new station buildings and relative works at Port Glasgow, for the Caledonian Railway Co. Deposit £2 2s. The Engineer, Buchanan Street Station, Glasgow.

SCOTLAND.—Jan. 7.—For the following works required in connection with proposed new dining hall, Coplawhill, Albert Road, for the Glasgow Corporation—viz.: (1) digger, mason, and brick works; (2) carpenter and joiner works; (3) slater works; (4) plumber work; (5) plaster work; (6) tile work; (7) painter work. Mr. J. Dalrymple, general manager, 46 Bath Street, Glasgow.

SOUTH KIRKBY.—Jan. 10.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with enlargement of South Kirkby Council School: Builder, joiner, slater, plumber, plasterer, painter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

SOUTHMINSTER.—Jan. 4.—For erection of headquarters, stores, &c., for 4th Battalion the Essex Regiment, for the Territorial Force Association, County of Essex. Send applications and £2 2s. deposit before Jan. 4 to Colonel F. F. Johnson, C.B., secretary, Market Road, Chelmsford.

TAUNTON.—Jan. 18.—For erection of the showyard buildings, enclosures, &c., for their forthcoming show at Taunton in May 1913, and for four subsequent shows in Somerset, for the County Agricultural Association. Mr. H. O. Samson, Lic.R.I.B.A., surveyor to the Association, Hammet Street, Taunton.

TOTTON.—Jan. 11.—For making alterations and addition to the cells and police stations at Totton, for the Hampshire County Council. Deposit £1 1s. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

WALES.—Dec. 30.—For erection of offices at the Pontardawe Steel, Tinplate and Galvanising Works, for Messrs. W. Gilbertson & Co., Ltd., Pontardawe. Mr. J. C. Rees, M.S.A., Parade Chambers, Neath.

WALES.—Jan. 3.—For additions and alterations to the Imperial Hotel, Mount Stuart Square, Cardiff, for the Alliance Buildings, Cardiff, Ltd. Mr. Sidney Williams, Lic.R.I.B.A., architect, Wharton Street, Cardiff.

WALES.—Jan. 3.—For erection of an administrative block receiving home, boys' home, stable, &c., at Llwydcoed, for the Merthyr Tydfil Board of Guardians. Mr. T. Roderick, architect, Clifton Street, Aberdare.

WALES.—Jan. 9.—The Swansea Harbour Trustees invite tenders for the supply, delivery, and erection of: (1) One framed and braced steel double-storeyed extension of the grain shed at the Prince of Wales Dock, with sides and roof covered with galvanised corrugated sheeting; the extension to be 70 feet long by 63 feet wide. (2) Two framed and braced steel single-storeyed extensions of the transit shed at No. 1 Quay, King's Dock, with sides and roofs covered with galvanised corrugated sheeting; the extensions to be 122 feet long by 60 feet wide and 96 feet long by 60 feet wide respectively. Deposit £3 3s. Mr. Talfourd Strick, clerk, Harbour Offices, Swansea.

WALES.—Jan. 9.—For the erection of a drill hall and house for instructor at Maesteg, for the County of Glamorgan Territorial Force Association. Deposit £1 1s. Mr. H. A. Clarke, architect and surveyor, Briton Ferry.

WALES.—Jan. 11.—For erection of a Council School buildings at Hook, in the parish of Llangwm, for the Pembrokehire Education Authority. Deposit £1 1s. Mr. O. T. Thomas, Lic.R.I.B.A., County Education Offices, Haverfordwest.

WESTHOUGHTON.—Jan. 14.—For the erection of an elementary school to accommodate 281 scholars at Fourgates, Westhoughton, Lancs. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

WHITEHAVEN.—Dec. 31.—For erection of two dwelling-houses, Low Road, for Mr. Hewitson Hurst. Messrs. J. S. Moffat & Bentley, architects, &c., 53 Church Street, Whitehaven.

WORSBOROUGH DALE.—Jan. 10.—The West Riding Education Committee invite whole or separate tenders for alterations, &c., to Worsborough Dale Council School (builder, joiner, slater, plumber, plasterer and painter). The Education Architect County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

TENDERS.

CLEETHORPES.

For erection of a Council School, for the Lindsey County Council Education Committee. Messrs. SCORER & GAMBLE, architects, Lincoln.

Kirton	£12,741	6	0
Sherwin & Sons	11,401	0	0
Taylor & Richardson	11,353	0	0
Tearby & Sons	10,950	0	0
Kettlewell	10,497	0	0
Wilkinson & Houghton	10,140	19	6
Markwell, Holmes & Co.	10,125	0	0
Ion	10,100	0	0
HEWINS & GOODHAND, Grimsby (accepted)	10,075	0	0

EALING.

For walling or fencing of new Courthouse.

Bollam (walls)	£795	0	0
Dorey & Co., Ltd. (walls)	737	0	0
W. J. DICKENS (walls, accepted)	718	0	0
Bollam (fencing)	625	0	0
Dorey & Co., Ltd. (fencing)	616	0	0
W. J. Dickens (fencing)	550	0	0

HARROGATE.

For alterations and additions to the Starbeck Baths, for the Corporation. Mr. C. E. RIVERS, A.M.I.C.E., borough engineer and surveyor, Harrogate.

Accepted tenders.

A. Hymas, mason	£523	0	0
J. W. Taylor, joiner	175	10	0
Braithwaite & Co., plumbers	92	18	0
Morrison & Co., furnisiers	71	9	6
J. Luty, slater	61	16	6
J. Morley, painter	43	0	0
A. Calverley, plasterer	48	8	6

HULL.

For the electric lighting, fittings and electric bells for the teachers' training college, Cottingham Road.

King & Co.	£1,460	7	0
Innes	1,415	12	0
Humber Electrical Engineering Co.	1,320	0	0
Shaw	1,299	13	10
COX-WALKERS, LTD., Darlington (accepted)	1,129	5	0

LEAVESDEN.

For erection of an iron bridge at Leavesden asylum, King's Langley, Herts, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, Office of the Board, Embankment, E.C.

Shaw & Co.	£9,636	0	0
General Iron Foundry Co.	6,500	0	0
Dawnay & Sons	6,476	0	0
Hayward Bros. & Eckstein	5,950	0	0
H. YOUNG & CO., LTD., Nine Elms Iron-works, S.W. (recommended)	5,838	0	0
For Work modified to suit Firm's own Stock Materials.			
M. T. Shaw & Co., Ltd.	9,456	0	0
Hayward Bros. & Eckstein, Ltd.	5,950	0	0
H. Young & Co., Ltd.	5,649	0	0

LONDON.

For alteration and extension of the receiving wards at the workhouse, Swaffield Road, Wandsworth, S.W., for the Guardians of Wandsworth Union.

Pickrill	£7,395	0	0
Hollingsworth	7,361	0	0
Cook & Sons	6,955	0	0
Johnson & Co.	6,789	0	0
Lewin	6,780	0	0
Dowsett & Jenkins	6,730	0	0
Reason	6,599	0	0
H. & G. Taylor	6,446	0	0
Moss & Sons	6,430	0	0
Davey & Armitage	6,277	0	0
Strand Building Co.	6,260	0	0
Wall	5,985	0	0
F. & G. FOSTER, Camden Works, Norwood Junction, S.E. (accepted)	5,973	0	0

LONDON—continued.

For the enlargement of the Gill Street School, Limehouse, for the London County Council.

Vigor & Co.	£3,264	4	0
Symes	3,205	0	0
Thomas & Edge	3,112	0	0
F. & T. Thorne	3,090	0	0
Lawrance & Sons	2,987	0	0
Kent	2,961	13	0
Appleby & Sons	2,953	0	0
Groves	2,868	0	0
Friday & Ling	2,831	7	0
GRIGGS & SON, Cubitt Town (recommended)	2,792	0	0
Architect's estimate	2,814	0	0

For enlargement of the girls' and infants' playground of the Pakeman Street School, Islington, for the London County Council.

Silk & Son	£1,485	17	0
Staines & Co.	1,252	0	0
Lawrance & Son	1,213	0	0
Williams & Son	1,192	0	0
Reason	1,179	0	0
Lawrence & Son	1,120	0	0
McLaughlin & Harvey	1,093	0	0
Stevens & Sons	1,089	2	6
BRAND, PETTITT & CO., 247 West Green Road, Tottenham (recommended)	1,026	0	0
Architect's estimate	1,174	0	0

For erection of a school for physically defective children on the Elthorne Road site, Islington.

Blake	£5,501	0	0
Symes	5,491	0	0
Lole & Co.	5,475	0	0
McLaughlin & Harvey	5,377	0	0
C. P. Roberts & Co.	5,377	0	0
L. H. & R. Roberts	5,259	0	0
Lawrence & Son	5,234	0	0
Patman & Fotheringham	5,233	0	0
Brand, Pettit & Co.	5,219	0	0
McCormick & Sons	5,197	0	0
Chessum & Sons	5,182	17	6
Lawrance & Sons	5,107	0	0
J. WILLMOTT & SONS, Hornsey and Hitchin (accepted)	4,950	0	0
Architect's estimate	5,300	0	0

MAIDENHEAD.

For kerbing, channelling, and paving High Street, for the Town Council. Mr. P. JOHNS, A.M.I.C.E., borough surveyor, Maidenhead.

Fitt	£1,786	16	3
Wimpey & Co.	1,672	2	6
Gibbons	1,590	15	5
R. FREE, Maidenhead (accepted)	1,577	17	11

MELKSHAM.

For erection of a picture house at Melksham, Wiltshire.

Messrs. BENNETT & STRATTON, architects, Finchley.

Roberts	£3,330	0	0
Light, Son & Co., Ltd.	3,129	0	0
Drew & Sons	3,111	0	0
Ash	3,030	0	0
Downing & Rudman	3,017	0	0
Parsons Bros.	2,435	0	0
Watts & Co.	2,233	0	0
Linzey & Sons	2,094	0	0
Bigwood & Co., Melksham (accepted)	1,990	0	0

SOUTH CHINGFORD.

For the erection of a public elementary school to accommodate 300 infants, for the Essex County Council. Mr. F. WHITMORE, county architect, Chelmsford.

Allen Bros.	£5,299	0	0
Glasscock & Sons	4,642	0	0
Robinson, jun.	4,631	0	0
Brand, Pettit & Co.	4,619	0	0
J. & J. Dean	4,534	0	0
Payne	4,498	0	0
Sharpin	4,345	0	0
Foster & Son	4,322	0	0
Strand Building Co.	4,237	0	0
Clark & Sons	4,196	0	0
Davey & Armitage	4,185	0	0
MATTOCK BROS., Wood Green (accepted)	4,117	0	0

RAMSGATE.

For the erection of an elementary school in Ellington Place, for the Corporation. Mr. GEO. GRAHAM TUCKER, Lic.R.I.B.A., architect, Ramsgate. Quantities by D. KENT, 83 St. Paul's Churchyard, E.C.

Barker & Son	£17,444	0	0
Maddison	16,998	0	0
Bennett	16,950	0	0
Godson & Son	16,538	0	0
West Bros.	16,395	0	0
Gentry	16,170	0	0
Elliott & Co.	16,120	0	0
Attwood & Sons	15,997	0	0
Browning	15,975	0	0
Hayward & Paramor	15,972	0	0
Archer & Sons	15,867	0	0
Martin	15,777	0	0
Wallis & Sons	15,743	0	0
G. H. Denne	15,275	0	0
Norris	15,218	0	0
Ballard	15,181	0	0
May	15,172	0	0
The Strand Building Co.	14,966	0	0
T. T. Denne	14,923	0	0
GRUMMANT BROS., Ramsgate (accepted)	14,699	0	0

For erection of a room for fire-alarm fittings and other works. Mr. T. G. TAYLOR, borough engineer, Ramsgate.

Jarman Bros.	£233	10	0
Forwalk	217	0	0
Ballard	208	10	0
Goodman	208	0	0
Goodbourn	200	0	0
Grummant Bros.	195	0	0
Goldfinch	189	0	0
J. E. WHITE, Ramsgate (accepted)	185	0	0

TRADE NOTES.

MESSRS. E. H. SHORLAND & BROTHER, LTD., of Failsworth, Manchester, have received repeat order to supply their double-fronted patent Manchester stoves with descending smoke flues to the Napier Hospital, New Zealand.

MR. ROBERT JONES, who has been appointed chief manager of the Oakeley slate quarry, which is one of the principal quarries in North Wales, began work as an ordinary quarryman. The appointment is exceedingly popular with the workmen.

THE scarcity of houses in Clitheroe is being severely felt, and at last week's meeting of the Town Council the Town Planning Committee and the General Finance Committee were authorised to select a suitable site and prepare plans and estimates for the erection of about twenty houses suitable for working-men's families.

THE Council of the University of Leeds, in order to provide for an extension of the administrative offices, have decided to enlarge the buildings in College Road by a block of two storeys, situated between the main entrance to the University and the Department of Chemistry. The erection of the building has been entrusted to Mr. Paul Waterhouse, F.R.I.B.A. The materials to be used on the frontage are red brick and stone of the same kinds as those used in the adjoining later buildings. The contractor, selected in a limited competition, is Mr. Paul Rhodes, of Leeds. Building operations will commence immediately.

MR. HENRY FROWDE announces a new volume in the "Church Art Series," of which the general editor is Mr. Francis Bond. It deals with the subject of English Church bells, and the author is Mr. H. R. Walters, joint-editor of volumes on the Church bells of Essex and Warwickshire. Curious local uses and customs in ringing bells are dealt with very fully, and very numerous specimens are given of the dedications, inscriptions, and stamps on bells. The volume also contains the most complete account yet given of mediæval and post-Reformation founders and foundries. The great development of interest in campanology may be gauged from the fact that the bibliography of bell literature in Mr. Walters's book occupies no less than eleven closely-printed pages. The volume will be profusely illustrated, as its predecessors in the series, with photographs and drawings.

ENGLISH TIMBER: ITS MARKETS, VALUE AND PRODUCTION.*

(Concluded from last week.)

THE fluctuating and uncertain supply of English timber assisted the foreigner. It enabled him to provide just what was required at any time, and thereby secure our markets. He was competing against a local, disorganised, and small trade, and so could defeat the English timber merchant almost everywhere.

By organisation we should ensure constant and regular supplies. Not until these are forthcoming for a given purpose can we expect consumers to purchase supplies grown in this country. I would remind you of the unlimited home market for timber—totalling approximately £30,000,000 per annum—which fact illustrates the fallacy of an argument often advanced to the effect that English timber realises a poor price in a particular district on account of "the glut of English timber in the market." The actual fact is usually quite the reverse. The difficulty is more often to obtain sufficient supplies. It is only in very limited and usually very local markets that there is any competition between supplies of English timber.

Another fallacy is that the consumer always purchases foreign timber, because it is cheaper than English. Study the quotations in the various building and other journals where the current prices of imported timber are given, and you will realise the falsity of this statement.

There is one great advantage which we possess, viz. the great natural superiority of the varieties of our timber, especially our hardwoods. All authorities admit that there is scarcely a country in the world where timber of finer quality can be, and, in many instances, is grown. This may be due largely to our climatic conditions and geographical position, and to the superior timber produced by our indigenous trees. All authorities are agreed that for tensile strength, durability and other important qualities there is no oak in the world to compare with English oak. The same remark applies to other of our native timber, especially English ash. The unique qualities of our native timber for special purposes points to the advisability of advertising the fact to the consumer. I attribute the loss of several of our best markets to the fact that we do not advertise our goods sufficiently to induce the consumer to pay a higher price for an admittedly superior article.

TIMBER FOR BUILDING CONSTRUCTION.

I have already referred to the unfortunate fact that architects at present almost entirely omit English timber from their contracts. There are many varieties of English timber which might be more extensively used, but here, too, I must confine my remarks to the question of oak, using this timber as an illustration. There is no question that for oak panelling, oak beams, oak entrance gates and fencing, and oak block floors, there is no oak which can compare with our native wood, thanks to its fine qualities and rich appearance and figure.

One of the principal objections advanced against our native oak is that it is harder to work than the foreign. Speaking generally, that is quite true, but it is at once a proof of its superiority. Nearly all valuable woods are more difficult to work than inferior. The prejudice against English oak under this head is largely responsible for other objections advanced against its use, such as that it is more likely to open or split. But consider the lovely old work in English oak of which there are so many examples everywhere. I am certain that if we only will use as much care, knowledge, and skill in the conversion to-day as our forefathers did there would be little foundation for these contentions. There is no branch where less knowledge and skill is brought to bear than in the seasoning, and also the conversion of English oak for such purposes as interior work.

I have often argued the undoubted advantages that quartering oak has over our present slipshod methods of converting it, but I seldom meet an experienced man who has ever considered the question seriously. About the only reason given for oak not being properly quartered is that there is more waste in conversion. If this is to be advanced as an excuse, I would suggest that it is actually an excuse for incompetence; and an illustration of the disadvantage of conducting the timber trade on too small a scale.

When going through the Chicago packing factories, I was informed that there was nothing they did not make

use of in a pig but the squeal. If a business is conducted on a large scale, and the man knows his business, there is nothing which he cannot make use of in the oak tree, not even excepting the sawdust or the bark, as these are capable of being utilised to-day. Again, in this case, the quartering of oak depends largely on the diameter of the log; but, as the London contractor—so one informed me—has to pay more for inch boards of English oak than for Spanish mahogany, I am convinced there is a large and lucrative trade to be done with architects. This conviction has been confirmed by conferences which we have held with them during the past twelve months.

I have referred more than once to steps which we were taking with regard to special points, and illustrated the urgent need of an influential body to organise supplies and to protect the interests of the producers of English timber and coppice.

Now these proposals have taken practical shape, I hesitate to refer to a body for whose existence I am largely responsible, and in whose work I take a responsible share. Since, however, the existence of

THE ENGLISH FORESTRY ASSOCIATION

is so little known, while its influence upon the markets, value, and production of English timber may well be incalculable, I trust that in these circumstances you will pardon the reference.

It is impossible to explain in a few words the detailed policy of this Association, but its objects may be summarised briefly under two heads:—

1. To encourage the demand for English timber (and coppice), to advertise its superior qualities, to encourage its use by consumers, to organise the markets, and to assist the consumer to secure sufficient and regular supplies with the least possible trouble.

In pursuance of this first part of our policy the following are a few of the special steps we are taking (or have taken):—

(a) We are holding conferences with architects, railway and colliery managers, and representatives of other special markets.

(b) We propose to distribute in the proper quarters information dealing with the different varieties of English timber and pointing out its special qualities for any particular purpose, and its advantages as compared with other timber (e.g., English oak for railway goods wagons, &c., English v. Russian larch for fencing, &c., larch v. Baltic fir for barge building, &c.).

(c) We shall endeavour to give the fullest publicity to some of these points, so that the general public will insist on purchasing, and be willing to pay more for, the superior article (e.g., English oak for panelling, block flooring, entrance gates, &c.).

(d) We hope to act as a central bureau to which consumers can write on any point relating to English timber, and especially as to where supplies can be obtained. Architects wishing to specify English oak for panelling, or coopers desirous of purchasing English barrel-hoops, will then know where to apply for information.

(e) We hope to organise new, and to revive old, woodland industries, and to take all necessary steps to insure proper markets for our coppice and timber.

The above steps must have a beneficial effect on English timber; in fact, we can already point to good results. Moreover, we shall do everything to ensure a proper supply of the timber to meet the demand, and endeavour to bring about a proper organisation of the marketing.

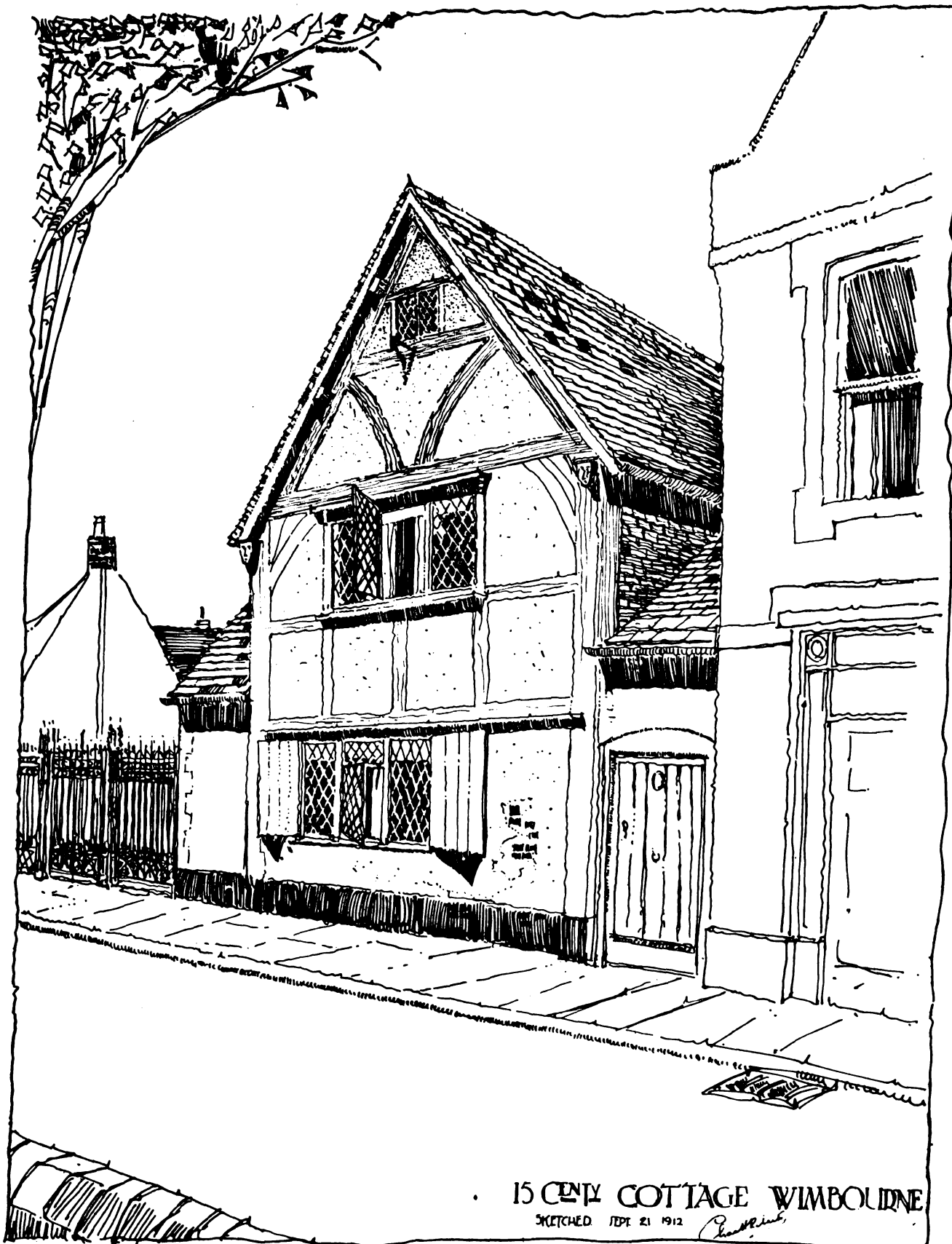
2. To supply all information relating to English timber (and coppice), especially its marketing, and to assist members in every way possible in the sale by placing them in touch with the best buyers and taking steps to ensure them the best price obtainable.

This will ensure the markets for coppice and timber being wide rather than local in character, and the introduction of buyers from a distance will obviate the necessity of relying solely on local competition. Leaflets will be distributed to members, giving information as to the different varieties of timber and coppice, suggesting new markets with information thereon, and emphasising important points in the production when required for a special purpose.

It is most important for producers to know the requirements of, and to keep in close touch with, markets. It is impossible to calculate the loss (1) to individuals, (2) to the country, and (3) to forestry and rural development resulting from our failure to do this in the past. It is nothing

* Extracts from a Paper by M. C. Duchesne (Fellow), read at the Ordinary General Meeting of the Surveyors' Institution, held on Monday, December 16.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



15 CENTY COTTAGE WIMBOURNE

SKETCHED SEPT. 21 1912

Prize Drawing by CHARLES H. ROBERTS.

short of deplorable that valuable woodland industries have been lost for want of a little organisation.

I would remind you that only a body consisting of land-owners and land agents can have a proper knowledge of the supplies of English timber available and can organise the marketing of these supplies. To obtain really good results from conferences, such as I have referred to, one must have them arranged by an independent body with the necessary information at their disposal, and with an influential council.

To remove any misapprehensions I wish to emphasise that this is not a trading association, and we do not propose as a body to buy or sell any timber. We do not, there-

fore, compete with timber merchants. On the contrary, by creating a healthy demand for English timber and improving the present position we must do them a great deal of good. Especially as we leave it to the recognised channels to supply this demand.

We do not charge commission on the sale of timber or otherwise, so we do not conflict with agents or auctioneers. We prefer in all cases to leave the actual negotiations on the sales of timber to be carried out between agent and purchaser. It is quite impossible for agents, with their numerous and increasing duties, unaided to keep in the close touch with markets that is so necessary to-day.

We limit our ground to the marketing and the com-

mercial utilisation of timber, so that we do not interfere with the arboricultural or any other existing society, and we hope to work in cordial co-operation with all other bodies.

We do not suggest that we have a five-minute solution for all the problems relating to English timber, but we submit that this is an honest attempt to tackle the question and to improve the present unsatisfactory state of affairs, and as such it is deserving of support.

There are, of course, as in every problem, many obstacles to surmount, not the least of which is to counteract the depressing influence of those who take delight in exaggerating the difficulties, and, in fact, make a special point of advertising them broadcast. It is most important, before undertaking anything, to examine the obstacles fully, to see how they can be overcome; but a person who thinks solely of the difficulties of a problem will inevitably end as a member of that band of infallible immortals who never make a mistake for the good reason that they never attempt anything.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Eton.—Roman Catholic Church. Messrs. Palmer & Sons, builders.

CHESHIRE.

Chester.—Working-class cottages (£7,000 to £8,000).

Congleton.—St. James's, St. Peter's, and St. Stephen's Council schools: alterations.

Macclesfield.—Technical and Science school: extensions, &c.

Nantwich.—Secondary school. County architect.

Tarporley.—British schools: alterations.

CORNWALL.

St. Day.—Sunday school, North Corner.

CUMBERLAND.

Calthwaite.—Church. Mr. J. H. Martindale, F.R.I.B.A. (of Carlisle), architect.

Carlisle.—Council school.

St. Bede's Council school: additions and alterations.

Borough surveyor.

Technical school.

DERBYSHIRE.

Derby.—County Children's Hospital: out-patients' department (£1,000).

Heanor.—Secondary school: additions (£1,000).

New Mills.—Secondary school for 252 places (£10,000).

Mr. G. H. Widdows, A.R.I.B.A. (of Derby), architect.

DEVON.

Barnstaple.—Battalion Headquarters for the County Territorial Force Association.

Devonport.—Church, Warleigh Road, Ford. Mr. C. Cheverton, architect.

Municipal buildings.

Ivybridge.—Detachment Drill Hall for the 5th Battalion County T.F.A.

Okehampton.—Headquarters for B Company, 6th Battalion County T.F.A.

Plymouth.—Headquarters for Devon R.E.

Plympton.—Headquarters for No. 2, Heavy Battery, Devon R.G.A.

Tiverton.—Drill Hall, &c., for E Company, 4th Battalion, County T.F.A.

Totnes.—Company headquarters, &c., for 5th Battalion and Royal 1st Devon Yeomanry.

DURHAM.

Hebburn.—Thirty-six houses, High Road (by Newton Terrace), for Colonel Carr-Ellison.

Four houses at the Colliery, Argyle Street, for the Council.

House, Canning Street, for Mr. G. Gordon.

Houghton-le-Spring.—Drill Hall, &c., for the County T.F.A. Messrs. Wright (F.R.I.B.A.) & Chapman (of Newcastle-on-Tyne), architects.

ESSEX.

Benfleet, South.—Church schools: additions (£1,800).

Grays.—Aveley school for 240 places.

Ingatestone and Fryerning.—Boys' and girls' schools: alterations, &c. (£750). Mr. A. E. Christy, F.S.I. (of London), architect.

HAMPSHIRE.

Odiham.—Three almshouses.

Petersfield.—Workhouse: sick wards.

KENT.

Chatham.—House, Athelstan Road, for Mr. H. P. Hughes. House, Upper Luton Road, for Mr. G. B. Silver.

Gillingham.—Lyceum Theatre and Picture Palace, High Street. Mr. G. E. Bond (of Rochester), architect.

Margate.—Flats and shops, Northdown Road. Messrs. Reeve & Reeve, architects.

Sevenoaks.—Special instruction centre. Mr. W. H. Robinson, F.S.I. (of London), architect.

LANCASHIRE.

Bury.—County police divisional headquarters, Tenterden Street (£14,000 to £15,000). Mr. H. Littler (of Preston), County architect.

Liverpool.—Public elementary school for 1,000 places, Netherfield Road South.

MIDDLESEX.

Southall.—Council school, North Road: enlargement by 400 places.

MONMOUTHSHIRE.

Little Mill.—Reformatory school. Mr. J. Bain, F.R.I.B.A. (of Newport), architect.

NORFOLK.

Hindolvestone.—(Supplementary to last issue.)—Church. Mr. H. J. Green, A.R.I.B.A. (of Norwich), architect.

NORTHAMPTONSHIRE.

Northampton.—Girls' High School.

NOTTINGHAMSHIRE.

Basford.—Workhouse: Nurses' Home (accommodation for eight to ten) £2,500.

RUTLAND.

Oakham.—All Saints' Church: improvements (£600).

STAFFORDSHIRE.

Audley.—Primitive Methodist Sunday school (£2,500).

Burton-on-Trent.—Workhouse: Children's Homes, near Belvedere Road (£1,200).

Hanley.—Dispensary.

Lichfield.—Workhouse additions. Mr. R. J. Barnes, architect.

Stafford.—Forty working-class houses, Blakiston and Harrowby Streets.

County Lunatic Asylum: Nurses' Home. Mr. W. J. Nevett, County architect.

Walsall.—Post Office.

SUFFOLK.

Debenham.—Sir Robert Hitcham Girls' school: enlargement by fifty places, &c. Mr. E. G. Fordham (of Ipswich), architect.

SUSSEX.

Berhill-on-Sea.—Bungalow, Lionel Road. Mr. G. H. Gray, architect.

House, Sutherland Avenue. Mr. G. Shoesmith, architect.

House, Manor Road, for Mr. W. Shannon.

Motor-house, Dorset Road. Mr. J. B. Wall, F.R.I.B.A., architect.

Cinematograph Theatre, Western Road. Mr. P. D. Stonham (of Eastbourne), architect.

York Private Hotel, Sea Road: extensions. Messrs. Tubbs & Messer (of London), architects.

Brighton.—School, Southern Cross. Mr. G. M. Simpson, A.R.I.B.A., architect.

WORCESTERSHIRE.

Dudley.—St. John's Church (£3,000).

Malvern Link.—Council school enlargement (£700).

YORKSHIRE.

Cloghton.—Parish church: additions. Messrs. Walker (F.R.I.B.A.) & Son (of Hull), architects.

Elsecar.—Market Hotel: additions for Mappin's Masbro' Old Brewery Co., Ltd. (of Rotherham).

Harrogate.—Council school.

WALES.

Llandovery.—College: laboratories and class-rooms. Mr. Ll. B. Price, B.A. (of Lampeter), architect.

Port Talbot.—Hospital, Aberavon. Mr. F. B. Smith, architect.

Sealand (Flintshire).—Public Elementary school for 320 places. Mr. S. Evans (of Mold), County surveyor.

SCOTLAND.

Aberdeen.—Factory, Rose Street: alterations. Messrs. Jenkins & Marr, architects.

Ferryhill Mills, Albury Road: additions. Messrs. Wilsons & Walker, architects.

SCOTLAND—continued.

Airdrie.—Fever hospital (£12,000).

Arbroath.—Public baths. Mr. P. C. Smith, Burgh surveyor.

Buckie.—Wesleyan Methodist church, Portessie (£2,000).

Edinburgh.—Nursing Home for mental cases (accommodation for thirty to thirty-five beds).

Stirling.—Caledonian Railway Co.'s station (£30,000 to £40,000).

IRELAND.

Athenry (near).—Sanatorium and medical superintendent's house, &c. Mr. W. A. Scott (as below), architect.

Belfast.—Vested school, Edinburgh Street. Mr. T. Houston, architect.

Cork.—St. Fin Barre's Cathedral: chancel completion (£1,500 to £2,000).

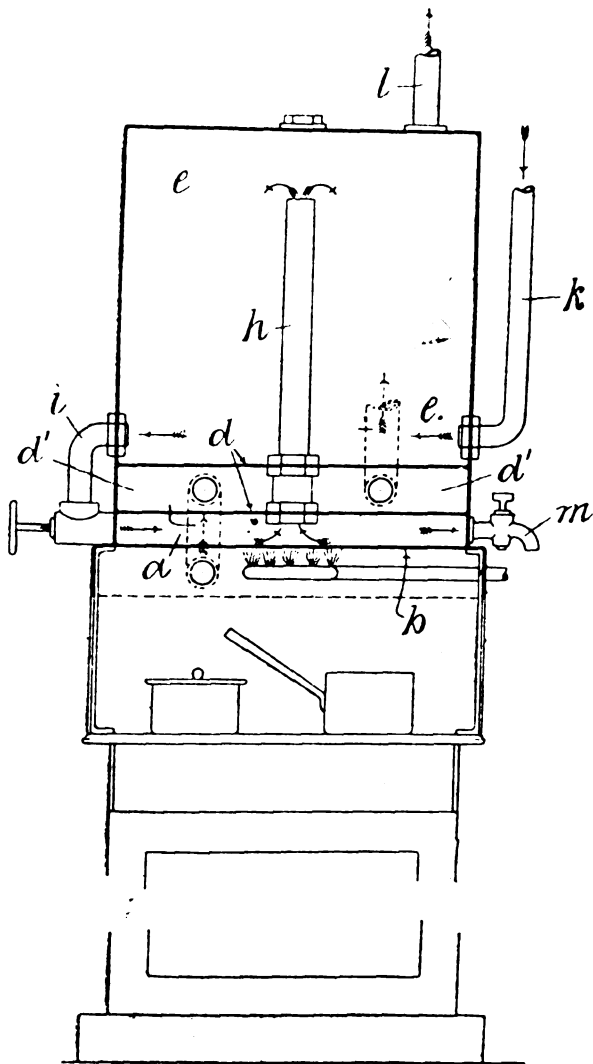
Galway.—Dispensary. Mr. W. A. Scott, A.R.I.B.A., M.R.I.A.I. (of Dublin), architect.

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 9,114. April 18, 1912.—Improvements in water-heating apparatus. Oswin Hansom, 16 Tithebarn Street, Liverpool. This invention has reference to water-heating apparatus, and more especially to that type of apparatus used for domestic purposes, heated by gas, electricity, or oil, in which



a large reservoir vessel is disposed above and communicates with a smaller and heated vessel. The object is to provide apparatus which is more generally serviceable for domestic purposes, capable of supplying water at a relatively large range of temperatures. Fig. 1 is a diagrammatic elevation, partly in section, showing the apparatus fitted to a gas or electric cooker. The boiler proper or lower vessel *a*, in which the water is actually heated by the heating medium applied to the lower plate *b*, comprises a casing with a partition

or diaphragm *d* across it of double form, with an air space *d'* between them, so as to limit the conduction of heat from the boiler *a* upwards; and directly upon this lower boiler portion *a* the upper portion or accumulator vessel *e*, which is of relatively large capacity, is placed, this vessel *e* being closed above by a roof plate. The double vessel *e*, diaphragm *d*, and bottom plate *b* (and also a lower ring stand) are all secured together by bolts and nuts on the outside. The upper vessel *e* and also the lower part or chamber *a* may be lagged. Between the double diaphragm *d* and the upper part of the accumulator vessel *e* an internal pipe *h* extends, and between the space above and beneath it is a conduit *i*, having a cock or valve upon it, by which the lower part of the vessel *e* and the vessel *a* are put in and out of communication, the upper part of the vessel *e* and the boiler part *a* being always in communication by the pipe *h*. Cold water is admitted to the vessel *e* by an inlet pipe *k* from a tank or other service, and the hot water to the bath, sink, and other taps is carried away from the upper part of the vessel *e* by the pipe *l*. A branch or pipe *m* is provided in the casing *c* of the boiler vessel *a* for drawing off boiling water from this vessel. In action when it is desired to heat water, say, to a medium temperature in the large or accumulator vessel *e*, the communicating controlling cock or tap is opened, so that the lower part of the chamber *e* is put in communication with the boiler *a* by way of the conduit *i*, which it controls; and the water heated in the lower and primary boiler *a* passes up the pipe *h* on the partition or diaphragm *d* to the upper part of the vessel *e*, and the cooler water from the lower part of the vessel *e* flows by communicating conduit *i* into the lower vessel or primary boiler *a*, and thus it is circulated continuously. In this condition water of medium temperature may be drawn off by the pipe *l* for various uses in the house.—Nov. 20, 1912.

PATENT SPECIFICATIONS PUBLISHED
DECEMBER 19, 1912.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 23,705. Oct. 26, 1911.—C. T. Lee, 9 West Side, Wandsworth Common, S.W. Ventilator screens.

26,027. Nov. 21, 1911.—F. W. Jennings, 12 Great James Street, Bedford Row, W.C. Control of the valves of heating apparatus and the like.

26,493. Nov. 27, 1911.—W. W. Rosenfield, 587 Hudson Street, New York, U.S.A. Suction cleaners.

26,500. Nov. 27, 1911.—Osmar Kuhne, 51 Eberystreasse, Berlin. Machine for trimming the edges of wall paper.

26,608. Nov. 28, 1911.—J. W. Cloud, 82 York Road, King's Cross, London. Pipe joint.

28,596. Dec. 19, 1911.—Carl Murer, Ruti, Zurich. Machines for moulding plastic substances.

1,920. Jan. 24, 1912.—R. H. Annison, 16 Water Lane, Great Tower Street, E.C. Piling, sheeting, and other members for constructional work.

2,543. Jan. 31, 1912.—J. B. Howell, East Walpole, Mass., U.S.A. Sanitary drinking attachments for fountains and taps.

3,746. Feb. 14, 1912.—J. S. Highfield, 16 Stratford Place, London. Lamp supports and casings particularly designed for use with electric incandescent lamps.

4,006. Feb. 17, 1912.—James Holt, 19 Marlwood Avenue, Wallasey, Cheshire. Silencing arrangement for water waste preventers, cisterns, or the like.

4,118. Feb. 19, 1912.—Albert Barnes, 37 Loder Road, Brighton. Closing water supplies to taps and other fittings.

4,399. Feb. 21, 1912.—George Cooper, of The British Prometheus Co., Ltd., Salop Street Works, Highgate, Birmingham. Electric heating devices.

6,182. Mar. 12, 1912.—Ferranti, Ltd., and J. Roothaan, Hollinwood, Lancs. Electric heating devices.

7,624. Mar. 29, 1912.—F. J. Kellow, Clyne Villa, Caerphilly, Glamorgan. Slab walls.

7,995. April 2, 1912.—J. W. Crosby, 5 Johns Street, Shildon, Durham. Moulds for forming blocks of artificial stone, concrete, and the like.

9,168. April 18, 1912.—Franz Kaiser, Ammsteg, Uri, Switzerland. An improved door lock and safety device therefor.

10,521. May 3, 1912.—The British Reinforced Concrete Engineering Co., Ltd., and A. W. Storey, 196 Deansgate, Manchester. Stirrups or shear members for use in reinforced concrete structures.

12,114. May 22, 1912.—Date claimed under International Convention, June 3, 1911. L. W. Mulford, Narbeth, Montgomery, Penn., U.S.A. Concrete skylights, vault-lights, and floor lights.

13,496. June 8, 1912.—Antoine Bruyas, 149 Avenue Parmentier, Paris. Apparatus for projecting fire extinguishing or other powder.

13,708. June 11, 1912.—Date claimed under International Convention, June 17, 1911. E. A. Tracy, 25 G. Street, South Boston, Mass., U.S.A. Paving blocks.

15,955. July 8, 1912. Date claimed under International Convention, July 10, 1911. Anton Drexler, 34 Lowengasse, Vienna 111, Austria. Building blocks.

16,254. July 11, 1912.—J. W. Ewart, The Jeannettes, Mill Hill. Baffles for preventing down draughts in flues.

16,432. July 13, 1912.—D. M. Russell, Piclou, Colorado, U.S.A. Combined locks and latches.

17,070. July 22, 1912.—R. A. Plumb, 58 Lafayette Avenue, Detroit, U.S.A. Rendering cement, mortar, and concrete waterproof.

17,419. July 26, 1912.—M. Warren, 35 Knatchbull Road, Camberwell, S.E. Clamp for holding woodwork when glued or otherwise required to be held.

20,050. May 2, 1912.—F. S. Crispin, 2108 North 20th Street, Philadelphia, U.S.A. Draughtsmen's triangles.

NORTHERN BUILDERS' FEDERATION.

THE annual meeting of the Northern Counties Builders' Federation was held at South Shields, when the following officers were elected:—President, Mr. W. T. Weir, Howdon-on-Tyne; Vice-presidents, Messrs. John Guthrie, Darlington, and John T. Armstrong, South Shields; Hon. Treasurer, Mr. John W. White, Sunderland; Hon. Auditors, Messrs. Percy Bray, Middlesbrough, and Thomas Anderson, South Shields.

An Executive Council was elected as follows:—Messrs. W. T. Weir, John Guthrie, John T. Armstrong, John Proud, Alex. Ross, Fred W. Ranken, Wm. B. Cooper, Robert J. Huntley, John W. White, G. Douglas, Stephen Easten, W. J. Robertson, W. Foster, R. Johnson, J. Simpson, J. Pelton, T. Brown, H. Doughty, and W. M. Thompson.

The following representatives were elected upon the Council of the National Federation:—Messrs. Stephen Easten, T. Wilkinson, J. W. White (John W. White, Sunderland, is a member ex-officio). On the National Conciliation Board, Messrs. John W. White and John Proud. On the Northern Centre Council, Messrs. Stephen Easten, John Proud, Wm. B. Cooper (J. W. White, ex-officio). On the Northern Centre Conciliation Board, Messrs. Stephen Easten and T. Wilkinson.

THE SOCIETY OF ENGINEERS (INCORPORATED).

THE third annual general meeting of the Society of Engineers (Incorporated) was held at the Society's offices, 17 Victoria Street, Westminster, on Monday, December 9, Mr. John Kennedy, President, being in the chair.

The report of the scrutineers of the postal ballot for the election of Council and officers for 1912 showed that the following had been duly elected: President, Arthur Valon; Vice-Presidents, H. C. H. Shenton, Norman Scorgie, T. E. Bower; Members of Council, Henry Adams, C. T. Walrond, Percy Griffith, H. C. Adams, J. R. Bell, S. Cowper-Coles, H. P. Maybury, B. H. M. Hewett, F. H. Hummel, G. A. Becks; Associate Member of Council, R. J. Simpson; Hon. Sec. and Treasurer, D. B. Butler.

It was announced that Premiums for papers read at meetings and published in the Journal during 1912 had been awarded as follows:

The President's Gold Medal to Mr. W. P. Durnall, for his paper on "The Generation and Electrical Transmission of Power for Marine Transportation."

The Bessemer Premium, value £5 5s., to Professor Herbert Chatley, for his paper on "Resistance to Rolling."

The Clarke Premium, value £5 5s., to Mr. Gerald O. Case, for his paper on "Ligno-Concrete."

The Bernays' Premium, value £2 2s., to Mr. J. P. Harris, for his paper on "The Construction of a London County Council Low Level Sewer from Battersea to Deptford."

A Society's Premium, value £2 2s., to Mr. P. J. Waldram, for his paper entitled "Test Deflections in Reinforced Concrete."

A resolution was passed thanking the other gentlemen who had presented papers during the year, some of whom, being members of the Council, were not eligible to receive Premiums.

INCORPORATED CHURCH BUILDING SOCIETY.

THIS Society held its usual monthly meeting on Thursday, December 19, at the Society's House, 7 Dean's Yard, Westminster Abbey, S.W. The Hon. Sir E. P. Thesiger, K.C.B., was in the chair. There were also present the Rev. A. G. Ingram, the Rev. H. W. E. Molony, Lieut.-Col. the Hon. G. H. W. Windsor-Clive, Messrs. George Cowell, F.R.C.S., E. Lee-Warner, J. E. Ollivant, F. H. Rivington, Lewis Wigram, and the Rev. T. T. Norgate, F.R.G.S., F.R.Hist.S. (Secretary). Grants of money were made in aid of the following objects—viz.: Rebuilding the church of St. Mary Magdalene, Stowell, Somerset, £60; and towards enlarging and otherwise improving the accommodation in the churches at Dymchurch, St. Peter and St. Paul, Kent, £40; and Pleaseley Hill, St. Barnabas, Notts, £50. The following grants were also paid for works completed: King Cross, St. Paul, Halifax, £250; Langley Mill, St. Andrew, Derbyshire, £150; Taplow, St. Nicholas, Bucks, £150; Colne, Holy Trinity, Lancs., £120; Headstone, St. George, Middlesex, £100; Gringley-on-the-Hill, St. Peter and St. Paul, Doncaster, £50; East Wickham, St. Michael, Welling, Kent, £50; Fitzroy Square, St. John, Middlesex, £40; Hendon, St. Paul, Sunderland, £30; and Rathmell, Holy Trinity, Yorks., £10. In addition to this the sum of £100 was paid towards the repairs of five churches from Trust Funds held by the Society.

The Committee appeals to Churchpeople for liberal donations to this old Society before the end of the year. At this time, when charitable donors are making special gifts, it is hoped that this, an essential branch of the Home Mission work of the Church, will be prominent in their recognition. The Society is badly in need of help in order to meet adequately many pressing applications now before it, their number being quite abnormal.

VARIETIES.

THE Manchester City Council have agreed to put an end to the present unsightly appearance of the old infirmary site. The ground is to be levelled, sown with grass, and provided with cross paths at a probable cost of over £1,000.

THE Secretary for Scotland stated in the House of Commons last week that there had been seven cases of bankruptcies of builders in Scotland during 1911, as compared with twelve and ten for the two preceding years. This number is lower than any other twelve months since 1903.

MR. GEORGE ECKLES, of Sans Leon, Carr Lane, Bridlington, and late of Hull, builders' merchant and brick and tile manufacturer, left estate of the gross value of £89,320 9s. 8d., of which the net personalty has been sworn at £842 17s. 4d.

THE Salford Borough Council have adopted the report of the Gas Committee recommending the purchase of a plot of land in Liverpool Street, containing 38,790 square yards, from the Earl of Ellesmere, for gasworks purposes, at a total cost, including payments for paving charges, buildings, and plant upon the land, cost of new roadway and boundary walls, &c., of £53,000. Direct application will be made to the Local Government Board for sanction to borrow the money.

THE Seaham Harbour Urban Council have decided upon a scheme for the erection of sixty-nine workmen's dwellings, and to proceed with the erection of forty-eight of them as soon as the sanction of the Local Government Board has been obtained for the borrowing of the necessary money. The site, on the south of the town, covers 2,874 acres, and is offered by Lord Londonderry at £550 per acre. The houses will be twenty-four to the acre, self-contained in blocks of five to six. Access to back doors will be through passages between each block. Each house will have a back garden 26 feet by 16 feet, and the back yards will have a clear paved area of 150 square feet. The houses will consist of a living-room 15 feet 3 inches by 14 feet on the ground floor, and also a scullery. Room has been left in the scullery for the insertion of a bath. On the first floor will be two bedrooms, one 15 feet 3 inches by 12 feet 3 inches, and the other 11 feet 9 inches by 12 feet. Joint wash-houses will be provided, well away from the dwellings. The rents will be 6s. per week. The total loan required for the sixty-nine houses will be £14,909 10s., and the scheme will not become a charge on the rates.

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